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IV

The ethnography is divided into three parts. In the first part, after providing a brief general sketch of Orokaiva culture, I shall examine the 'starting mechanisms' of Orokaiva exchange cycles, both in traditional institutions (Ch. III) and in institutions developed since the British-Australian conquest (Ch. IV). The second part of the study is concerned chiefly with objects of mediation: land, taro, pigs, minor foods and ornaments (Chs. V–IX). In the third part the focus shifts to the relations between exchange partners mediated by the prestations analysed in the preceding chapters.

Although my presentation of Orokaiva social structure in this part of the work is not intended to be controversial, the focus differs from that of earlier ethnographies and here and there earlier findings had to be questioned in the light of fresh evidence. Orokaiva society contains several types of groupings (clan, local clan group, lineage, plant emblem group) whose members, according to informants, are recruited exclusively on the basis of agnatic descent. Earlier investigators have emphasised these patrilineal characteristics by equating the lineage and clan emblem group, proclaiming them both to be segments of local clan groups, and by treating the local clan group as something like a segment of a clan. My own analysis, however, will be concerned more with clan fusions and fissions, with irregular recruitment within the plant emblem group, and with the lack of evidence for agnatic connection between lineages and local clan groups. My evidence shows that the non-agnates recruited into these putatively agnatic groupings are mostly uterine kin. But above all I shall try to establish that these departures from the supposed agnatic norms are not cases of irregularity or deviance, but an integral part of the Orokaiva kinship system. I shall suggest that normally clans are not intrinsically agnatic but rather that they arose out of alliances between smaller groups whose original link was affinal. The effect of this argument is to show the narrow limits of range and scope within which Orokaiva patrilineal corporations operate, and thus to emphasise the importance of the exchange system as a principle of social structure.

As soon as we extend kinship analysis beyond the conjugal family, we observe that mediation is carried on not only through non-social objects used as gifts or prestations, but also through social objects used as intermediaries. Thus, in the relation between sister's son and mother's brother there is an intermediary who is mother of one of the partners and sister of the other. Similarly, the relation between two brothers-in-law is mediated by a woman who is wife of one and sister of the other. Men also often act as mediators between exchange partners when these are not linked by kinship, or when the exchange partners are female.

The principles of exchange are the same whether the objects of meditation be social or non-social. In both cases there are two partners, *ego* and *alter*, who establish or maintain a social relationship. The object of mediation, whether social or non-social, is so chosen that both *ego* and *alter* are – or become – closely identified with it. If *ego* and *alter* are male non-agnatic kinsmen, the mediator must be a woman: if they are female non-agnatic kinsmen, the mediator must be a man. In either case, the concept of an object of mediation implies that at the beginning of the transaction *ego* had some exclusive claim

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824 262 827 [721] hunting territories and the like. Thus the Orokaiva regard themselves as stronger than Managalase (certainly they are more numerous as their fertile land can support a far denser population), which served to show the superiority of taro over yam.

The taro myth discussed above may therefore be recognised as a charter for two contrasting types of taro gift made by Orokaiva. Woman provides cooked taro domestically but man, in providing the raw feasting taro, employs taro as a symbol of fighting strength. Heaped up in the manner of sacrificial victims, they are given to guests, not so much to express commensality as to display and offer for consumption the competitive strength of the donating group.

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4. *A Survey of Taro Gifts*

824 431 125 128 One special interest that taro gifts hold for the field anthropologist is their great frequency which opens the possibility of statistical analysis of a fairly large number of gifts of a fairly homogeneous kind. Twenty-two households were visited daily (or almost daily) providing a record of taro gifts made over twenty-eight days from 31 January to 10 March, 1967. Informants were asked to whom they had sent presents during that day and from whom they had received presents. The survey provided useful incidental information about visitors who had been in the village during the day without my knowledge, and about gifts of objects other than taro. For the purpose of analysis I ignored gifts made to persons not resident in the village, as these were scattered over a great many villages and the survey period was not long enough to establish statistical regularities. Waddell reported that 40 per cent of taro gifts were made to persons outside the village (Sivepe), 10 per cent to villages within one mile of Sivepe, 14 per cent to villages situated between one and two miles from Sivepe, 9 per cent to more distant villages and 6 per cent to expatriate centres. (1968: 218). The statistics compiled by Waddell, however, are in terms of weight rather than the number of gifts. A gift of cooked taro made within a village was for one meal only (averaging perhaps 5 lbs.) while a gift of raw taro made to visitors from other villages or at feasts was more likely to weigh at least 25 lbs. Thus the number of gifts made to persons other than villagers was less than 10 per cent of the total.

As I intend to draw some significant conclusions from the statistics of intra-village taro gifts, it is relevant to describe briefly some difficulties I had in collecting these statistics. The fact that households were asked to report on gifts received as well as gifts made provided an effective check, as ideally all items should have been mentioned twice, once by the donor household and once by the recipient household. People very often forgot to tell me of some of the gifts received and made. Some people were most likely to forget what they had received; others would forget what they had given. If my study had been biased towards psychological anthropology, the frequency of these types of memory lapses among individuals might have given me a basis for establishing a typology of exchange partners. I soon found that nobody claimed gifts they had not actually made or received

From the first day of the survey it became obvious that my questions, simple though they seemed, contained an unexpected ambiguity: should the informant

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include gifts to persons of the same household? It would have been easy enough to lay down a rule that this kind of gift should be excluded from the survey and nor mentioned by informants, but I decided that it was not for me to start defining to the Orokaiva what was meant by a phrase like *ba ikari* 'to give taro'. Evidently food given to household members was, in certain circumstances, regarded as a gift. I recorded a total of 265 such 'transactions' from fourteen households during the survey period. Among those who mentioned such 'transactions' were some of my most helpful informants. At the beginning of the survey, household members were only sporadically mentioned but the number of mentions increased as the survey proceeded, until a pattern emerged.[2] A gift of food from wife to husband was never mentioned. A gift to a household member other than a natural or adopted child of one or both of the marriage partners was always included. Married daughters and sons old enough to live in a bachelor's house were always included. What confused informants most was how to regard gifts to younger sons and daughters.

Some parents included their children if they were old enough to be of school age. Others included the boys if they had gone through the 'birthday' ceremony which nowadays takes the place of initiation and included the boys if they had been through puberty seclusion. Others again did not include their dependent children at all. There was no uniform pattern. I ascribe the confusion to two factors: first, it used to be customary for children to start working in the garden at a very early age, doing whatever was within their capacity and making some contribution to the household economy. Boys would be given their own small garden plots at an early age and their sisters would fulfil some feminine tasks (planting, harvesting) in these plots. When schooling became general in the district, the children ceased making that kind of contribution. Secondly, school 'lunches' were mostly taken by the children every morning and eaten on the school grounds. These lunches were identical in form to the intra-village taro gifts: they were a meal of cooked taro cooked by the mother and taken out of the home.

Intra-household taro gifts were reported to me in too inconsistent a fashion to permit statistical analysis, but they were interesting as they revealed the household to be, in itself, a minuscule exchange system. This system was intact to a greater extent in Hohorita, where schooling ends at grade 3, than in Sivepe where adolescents are mostly at school rather than in the garden. At Hohorita adolescents grew and (if they were females) harvested vegetable food, gave this to their mothers, and their mothers fed and looked after them. The same principle applied in Sivepe to adults living with their adult and married children, brothers or sisters. Even very old men and women do what gardening they can to make a contribution. The record shows, in the case of some of these old people, that they made hardly any contribution at all during the survey period. As this was a period when taro was becoming scarce, their small gardens were exhausted, but a few months later some of them would again have crops of their own.

Most of the older people who thus depended on gifts for their sustenance were not fed by one household only, though usually one household bore most of the burden. However, wherever there was a helpless old person, there were always at least two regularly contributing households in addition to the one to which that person was attached. We must distinguish, among the Orokaiva,

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between co-residence and commensality, notions which the Orokaiva themselves clearly do not regard as synonymous. Persons who are co-resident are always, in practice, at least in part commensal, they are not necessarily wholly so. Not only old people but also bachelors and young women, single or married, receive gifts of taro from other households of which they are the specific recipients. Food they receive in their own residence may therefore be classed as a gift if they have not supplied raw food to the housewife on the same day.

To what extent is there a notion that food gifts should be balanced as between donor and recipient? According to the statistics, perfect balance is uncommon and occurs most often where exchanges are somewhat infrequent. In Table VI/1, I classified households according to the degree of balance in all intra-village taro gifts made to persons resident in other households. The code number 0 indicates perfect balance in the total number of gifts sent and received; the code number 6 indicates an imbalance greater than the proportion 75:25. Intermediate code numbers indicate a lesser amount of imbalance. At first sight, Tables VI/1 and VI/2 suggest that little importance is attached to balance in food gifts. In more than half the households, the total imbalance exceeds the proportion 60:40. Nor does there seem to be an ideological charter enjoining a person who has received a food gift to return that gift in the near future. The donor says he expects no return gift. If one asks him why he has made the gift he never mentions services or gifts received in the past for which he may be reciprocating. He will say, 'because that man is my wife's father's sister's son' or whatever the kinship relation may be.

A more careful look at the figures, however, makes one wonder whether such indifference to balance is the whole story. Some informants stated that though the donor expects no return gift, the recipient often likes to make one. Some families are more punctilious than others in this respect. The most punctilious of all was the leading family of Seho (H5, H12, H13, H14, H20, H21). They all had an imbalance smaller than the proportion 55:45. Only one other household in the sample achieved this low score.

In most of the households where there is an extreme inbalance, the explanation is that the household contains aged people who require help, or that the household is deeply involved in giving help to aged people. This factor accounts for the inbalance in households 1, 2, 3, 6, 7, 10, 18, 18a, and 19. The imbalance in households 8 and 9 is explained by the fact that householder 8 was helping householder 9 to build a house. Householders 5, 15, and 17 were immigrants from Garombi who gave more than they received, probably because of an anxiety to become accepted and build up good relations in their new place of residence.

Finally, the notion of balance is implicit in the timing of many of the taro gifts. It was a very common practice indeed to make a return gift on the same day as a gift of taro had been received, or on the day immediately following. Though informants told me they were under absolutely no obligation to respond so urgently or to respond at all, the record shows that in practice they frequently did so. We must therefore conclude that the Orokaiva do have some notions which lead them to reciprocate taro gifts, even though there is no rule enjoining immediate balanced exchange.

I would suggest that the Orokaiva proceed from a notion that taro is a

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TABLE VI/1

SIVEPE: TARO TRANSACTIONS BY HOUSEHOLD

Household Code No.	*Total Transactions*	*Sent*	*Received*	*No. of Partners*	*Degree of Imbalance**
1	58	40	18	9	4
2	37	1	36	6	6
3	41	26	15	9	3
4	57	35	22	9	3
5	101	54	47	14	1
6	70	45	25	4	3
7	87	24	63	12	5
8	56	33	23	3	2
9	71	40	31	6	2
10	58	21	35	5	3
11	68	36	32	10	1
12	117	59	58	8	1
13	85	44	41	7	1
14	101	52	49	7	1
15	60	34	26	11	2
16	60	37	23	13	3
17	79	50	29	14	3
18	62	9	53	10	6
18a	48	37	11	10	6
19	81	54	27	9	4
20	84	46	38	12	1
21	82	41	41	8	0

* Code: 0 = larger donor gives exactly 50% of gifts;
1 = larger donor gives 50–55%; 2 = larger donor gives 55–60%;
3 = larger donor gives 60–65%; 4 = larger donor gives 65–70%;
5 = larger donor gives 70–75%; 6 = larger donor gives over 75%.

mediating element in the perpetuation of social relations. Within a village, social relations of some sort exist between almost all the members. In my enquiries in Sivepe I came across only one instance of two men, both resident in Sivepe, who denied having or ever having had social relations of any sort with each other. There may have been one or two more instances I did not detect, but they would be very rare. Social relations between households in a village may range from very distant (when no taro gifts are exchanged) to very intimate (when taro gifts may be made four or more times per week). Many households have social relations which are close but not intimate, symbolised by taro gifts made a few times per month. The frequency of taro gifts is of course not the only way of symbolising intimacy, though it is the sign I found the easiest to quantify. It was my impression that those households which maintained the most frequent informal association with one another were also those who made each other the most frequent taro gifts. These were the households who were deeply dependent

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5. *Clusters and Chains, Two Patterns of Intimacy*

How can taro gifts mediate close associations among larger groups than dyads of exchange partners? This involves a complex sociological problem that cannot be solved in the framework of the present study: why do men tend to give disproportionate attention to a very small number of their closest associates and much less attention to a larger group who are still close and trusted friends? A principle of allocation clearly operates here: intimate relationships demand more time and energy than can be devoted to the entire circle of close friends. But it is by no means clear what is the role of intimates as distinct from other valued friends. This hierarchy of association, whatever its explanation, is very evident among Orokaiva, not only in the way in which individuals spend their leisure time and compose their co-operative groups, but also in their allocation of taro gifts among their exchange partners.

In Sivepe the number of exchange partners maintained by a household varies from three to fourteen, with an average of 8.5. The first (i.e. most frequent) partner is involved in an average of 38 per cent of all taro transactions, the second partner in 24 per cent, the third in 12 per cent while the other partnerships account for only 26 per cent of all transactions. It is clear that the first and second partners are in a very privileged position in comparison with the others.

A second way of describing the pattern of intimacy would be to assume that there is some community norm whereby a certain degree of intimacy is expressed by a specific frequency of interaction. My impressions, supported by the statistical data and some generalisations offered by informants, is that each household has a few preferential partners to whom it gives or from whom it receives taro at least twice a week, but often far more frequently. In this sense every household in my sample had at least two preferential partnerships. Ten households out of twenty-two had a third, five households a fourth and one (the Seho clan leader) had five preferential partnerships.

The data show that where households are linked by primary kinship, they mostly set up a 'preferential' taro partnership. Only 30 per cent of preferential partnerships, however, fall in this category. The rest can be accounted for only if land transactions, political considerations, and the total past history of personal relationships and transactions are taken into consideration.

For statistical reasons alone it would seem that preferential partnerships are worth some detailed investigation. They clearly add substantially to the number of intimates on whom an individual can count for support over and above those who can be depended on purely by virtue of membership of the same corporate group. In addition preferential partnerships are of crucial importance as a basis for close co-operation between sets of persons larger than the exchanging dyad.

In Fig. 8, all preferential partnerships in Sivepe are shown in sociographic form. A distinction has been made in the sociogram according to the extent to which social preference is mutual. Households A and B may be said to stand in a 'closest mutual relationship' (marked by a hard line), if B is a first or second partner to A and A is a first or second partner to B. If none, or only one of these conditions are satisfied, the relationship is shown by a wavy line.

Though a full analysis of taro gift patterns has to await separate publication,

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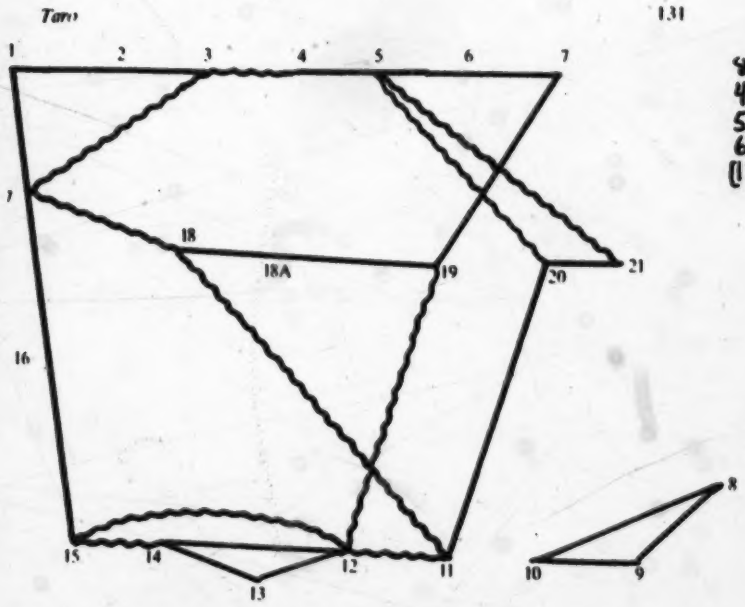

Fig. 8. Taro gifts in Sivepe: sociogram of preferential partnerships. Households are numbered as in Fig. 9 (see p. 202). Straight lines indicate closest mutual relationships, while wavy lines indicate other preferential partnerships.

some generalities are given here, related to our general argument. Taro gifts were used especially to mediate relationships between neighbours, close kin, exchange partners, and with certain persons of special status such as leaders, magicians, and the like. The Garombi immigrants used the system somewhat differently from the old residents, as the former were more actively seeking new partnerships, especially with the more influential old residents.

Graph analysis shows two chief patterns: the cluster and the circuit. From the viewpoint of the quality of social relationships, the cluster is obviously to be preferred, as it provides intimate one-degree links between all members of the community. No doubt the Orokaiva's traditional predilection for small villages of six households or so arose from the comfortable feeling that all households could then be intimate with each other. We find several clusters among Sivepe inhabitants, especially among Seho and Sorovi households, but if preferential partnerships did not exist except inside these clusters, the result would be a division of the village into very loosely connected cliques.

In fact, we find a second connecting principle which I have called the circuit, as it resembles the Hamilton circuit familiar in graph theory. A circuit of *n* households (H1, H2, H3 . . . , Hn) is defined as a set in which H2 has a

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'closest mutual relationship' with H1 and H3; H3 with H2 and H4 and so on. Closure of the circuit is achieved if Hn has a 'closest mutual relationship' with H(n – 1) and H1. The largest such circuit, or near-circuit, connects the great majority of households of all clans and may thus be considered a unifying principle for the village as a whole. The second, much more strongly constructed, links eleven households of the Jegase-Sorovi clans, but includes not a single Seho household. Even though this circuit of ten households contains two flaws (wavy instead of hard lines), it is most improbable that it would turn up by chance.

How circuits are generated in time becomes clear from a study of the recent immigrants from Garombi. Householder 17, before leaving Garombi, had no particularly close links in Sivepe; yet our survey shows him as having two preferential partnerships with old-time Sivepe residents, one Jegase and one Seho (H18 and H16 respectively).

A curious feature is the almost uniform practice of choosing immediate neighbours as preferential partners. It would be too simple, however, to suppose that there is a rule whereby one must have these specially frequent exchanges with one's neighbours. Certainly I never found a trace of such a rule. On the other hand there are quite complex considerations in the choice of house sites, such that there is the maximum correspondence between physical and social distance from others in the village. When social relations between neighbours become bad, one of them is liable to shift his house elsewhere, so he can be close to an intimate.

The circuit corresponds remarkably well to the Orokaiva system of clan formation. Thus the Jegase 'clan' in Sivepe is actually constituted by four totally unrelated groups, three of which migrated to Sivepe since the beginning of the century and which gradually grew into a single clan by a process of fusion (See Chapter X). They now occupy six houses and ancillary buildings on the Jegase-Sorovi circuit, and three houses which form a chain attached to that circuit, i.e. a total of nine houses. Each 'lineage' forms a short chain of its own, and the chains are mostly linked together by uterine bonds. Now it is precisely these uterine bonds which brought about the fusion of the groups of migrants into a single clan. Yet this clan was still far more fragmented than Seho. Therefore, there was not much incentive to clustering, which requires far greater intimacy than existed among the Jegase.

It is precisely the lack of intimacy between small social chains that produced the Sivepe circuits. As we have seen, these circuits are mathematical models built after the reality of residence and taro exchange patterns. It is characteristic of a circuit that no two households share the same 'closest mutual relationships'. Thus H2 and H3 have a 'closest mutual relationship' but H3 does not share the 'closest mutual relationship' between H2 and H1. It is in this respect that a chain is quite unlike a 'minimal cluster'. The chain arrangement has two practical consequences: if H1 falls out with H3, H2 will mediate; and if H1 and H3 wish to co-operate, H2 will normally be a party to the arrangements as these tend to be made in front of his house, in his hearing and probably in his presence. The structure provides for the possibility that H3 may draw in H4, H4 may draw in H5 and so forth. Actual cases of such political action will obviously tend to be

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less tidy but lateral communication by means of intermediaries was a pattern to be frequently observed.

The topographical position of a house was therefore at the same time a fixed position in the taro exchange network and in the network of alliances. One could almost tell from where a person lived what that person would do. When fierce arguments and hot abuse rang through the night as two households held a cutting dispute with each other, those households were likely to live at opposite ends of the village, either at far ends of the chain or at opposite ends of a wider and looser chain of associations which comprised the village as a whole.

The Seho clusters and the Jegase–Sorovi chain were at opposite sides of the village, but were linked to each other by two connecting chains, consisting largely of people who lived at the outer ends of the elongated village rectangle. One of these connecting chains was formed by men who came from Soroputa and who married wives from the Seho clan. (H5, H20-H21, H11, H12.) The other connecting chain consisted of Seho and Sorovi householders whose distinguishing feature was that they maintained rather wide taro exchange networks, had peaceful natures and tried to keep on friendly terms with almost everyone. (H14, H15, H16, H17). The links shown on the sociogram between the Jegase-Sorovi chain and the Seho people are of great interest as they show the degree of closeness between the two main clan formations (Jegase and Seho). Judging from the taro exchange network, these relations are not critically remote but on the other hand not so close that the two sides are in any danger of losing their separate identity.

Leadership in the two clans differed in a manner that is clearly recognisable on the graph. Seho had an aristocratic type of New Guinean 'big man' leadership, the leader (H12) having hardly any real intimates except primary kin who were rather numerous. These primary kin, however, between them, had intimate links with nearly everybody in the village. The leader had preferential partnerships and close connections with a few but not all the Garombi immigrants, using his close contacts as middlemen. The Jegase sociometric star (H5) had a far wider exchange network, including all the Garombi families, and almost nightly there were large gatherings in his *arara*. On the other hand, his primary kin links were far fewer; he depended on the systematic fostering of new associations for his challenge to the Seho leadership. Thus cluster and circuit, the two types of association found in Sivepe, each had its own characteristic form of leadership.

6. *Structural Implications*

We have found that gifts of cooked taro are essentially a woman's gift, and that these gifts, if made continuously at short intervals, are a ritual statement of the maintenance of intimacy between pairs of households. The exchange may be stated formally in the following diagram:

5: Schwimmer E-4,5 (1966-1967) 1973
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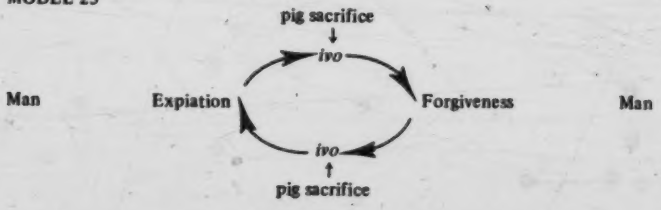
sacrifice is a communion, as the obtaining of *ivo* is ultimately dependent upon an effective identification of man with the power-conferring ancestors.

Models 23 and 24 may be reduced to a single one which shows the essence of the whole transaction:

MODEL 25



This model, which is on a more abstract level than the previous two, states that two parties standing in a relation of social opposition can establish or restore friendly association with one another through the *mediation* of *ivo* (the source of *ivo* being the pig sacrifices). This is the essential equation of social exchange. *Ivo* cannot be obtained by the offerers of sacrifice acting alone, but it is necessary and sufficient for efficacy if two parties participate, one in the role of offerer and another in the role of recipient. The roles of 'offender' and 'offended' are ritual roles in which the actual amount of guilt or shame felt varies widely according to circumstances. The assumption of such roles is made necessary because strife has a continuously debilitating effect on man's *ivo*. Like many other peoples (viz. Monica Wilson 1952: 99–112; 1959: 161, 165, 217; Burridge 1969), the Orokaiva believe that 'anger in the heart' weakens the man who feels it. But the Orokaiva emphasise even more the obligation of the offender to assuage that anger, however caused. Actual misfortunes are mostly explained by anger existing in someone else's heart. The guilty person is deemed to be he who, after being made aware of this anger, does nothing to remove it. If the angry person uses sorcery or does some other harm it is not he but the victim of retribution who should feel guilty. The oozing away of *ivo* as a result of strife can be reversed by the holding of pig-feasts at which the host goes through a ritual which contains elements of both communion and expiation, but which essentially serves the mediation of social exchange.

I shall now test the usefulness of this model by using it to account for some empirical facts related to Orokaiva pig sacrifice. I shall discuss, because of the relative wealth of available material, the sacrifices made at inter-village feasts at the time of the main harvest. I shall also show how gifts made between affines may be interpreted with the help of the model.

6. *Expiation and Communion in Feasting*

The decision to hold a feast might arise in two ways. First, there might be an urgent need to offer the feast to a specific outside group, e.g. to make peace, or return a feast to which the group had been invited. Secondly, there might be a

6: Crocombe E-4,5 (1963) 1964 OJ23 Orokaiva OJ23

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[p. v]

[p. vi is blank]

Foreword

We were aware before beginning this study that communal plantations in the Northern District had been a failure. The Research Unit is generally more interested in successful ventures than in unsuccessful ones and this is the only failed experiment to have been included in our current land study programme (which includes more than twenty sample studies in various parts of the country). The reason for this study was that detailed comparative studies were being undertaken with other approaches to cash cropping among the Orokaiva and a full comparison could not be made without the inclusion of the communal experiment. 121

For assistance in the field I am particularly grateful to Mr. Edric Eupu and Mr. Cromwell Burau as well as to the people of the many villages we visited in the course of the study. Mr. Max Rimoldi kindly assisted with research from early published reports. The co-operation and interest of the District Commissioner, Mr. L. Williams, and other officials, missionaries and settlers is acknowledged with gratitude. 128 [114]

7: Rimoldi et al. E,I-5 (1962-1963) 1966 QJ23 Orokaiva QJ23
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Foreword

121 The New Guinea Research Unit's current program includes a comparative study of changing agricultural and social systems among a number of groups of the Orokaiva people of Papua's Northern District. A wide variety of schemes for the development of agricultural land has been introduced there, especially over the last decade. As groups to be studied, samples were chosen which currently differ in their systems of land tenure, social organization and management of labour resources - to name the more striking general areas of difference without mention of factors which may be constant.

101 For the present report fieldwork was conducted at Sivepe village (also known as Sive) during December 1962 and January, February and early March 1963 with a brief visit again in May 1963. The basic subject of our study was a sample of 50 villagers.

128 114 Work in the field was shared by Burau, Ferraris and Rimoldi. Of the results which are presented below, the substance of the observations on types of subsistence crops and associated methods of cultivation and on the techniques currently used in the husbandry and production of livestock and of cash-crops at Sivepe[1] is the contribution of Ferraris. He also prepared the preliminary drafts of maps from which he did most of the basic calculations of sizes of landholdings and areas under cultivation.

124 Among other tasks in the field, Burau had the role of interpreter. He also clarified many aspects of the relation of the Orokaiva to their land and contributed points to most parts of the report.

128 Our thanks are due to the people of Sivepe for their hospitality and co-operation, to Mr and Mrs C.E. Searle, who in many ways provided valuable assistance, to Mr and Mrs R. Cheetham, to the staff of the Department of District Administration, the Native Lands Commission and of the Anglican Mission at Agenahambo and Sohobata, who all gave generous help. For information and discussion we are indebted to these people, to Mr H. Plant, Mr R. Spinks and especially to Mr G. Hogbin, Mr P. Krinks and Mr E. Waddell.

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[1] See Chapter 2, Sections b. and c. and Chapter 4, Section c.

128 [114] We were fortunate in the extensive assistance and guidance which we received from Dr R.G. Crocombe in conducting the survey and at all stages in the preparation of the manuscript. Drs Bettison, Brookfield and Brown also read drafts of this report and we are grateful for their comments which we found valuable in revising the manuscript.

127 We wish also to acknowledge the co-operation of the Statistician, Bureau of Statistics, Papua, who made available the data from the Food and Agriculture Organization Survey, and of the trustees of the Mitchell Library, Sydney, who gave permission to quote from F.E. Williams' papers in their collection.

128 Besides data collected on a standard series of topics investigated in the related series mentioned above, our report also includes discussion of the relationships between land tenure and land use on the one hand and residential and local organization on the other - questions which have been raised by anthropologists and administrators writing on this Orokaiva area.

731 178 [623] The population displaced and resettled after the eruption were almost all mountain Orokaiva; one legacy of these events was the protracted complication of land tenure, which some of the people later found an obstruction when they were caught up in a general increase in enthusiasm for cash-cropping. This coincided with the formation of the Higaturu Council whose membership consisted in large part of the mountain Orokaiva.

657 178 Community development plans made after the eruption[1] were never successfully launched, but the tenure situation in the council territory and specific areas of acute land-consciousness are the problems which patrol staff felt made it essential to regularize the tenure of cash crops at this time.

241 178 [361] In 1951 Keesing expected that the marked trend towards larger settlements witnessed after the eruption would, as a matter of course, be reversed as circumstances permitted villagers to revert to their normal horticulture involving frequent rotation of cultivated areas; paradoxically, it was in view of the spreading enthusiasm of the Orokaiva for a more intensive, commercial agriculture about 5 years later, that some mission staff anticipated similar fragmentation of the same large villages.

361 178 [12] Considerable topical interest is given to the question of the connections between settlement patterns, agricultural systems and title to land by current changes in the Orokaiva area which have implications of further radical adjustments in residential patterns. In a recent development a few local government councillors had initial success in advocating the consolidation of villages apparently as a means of establishing an economic base for the provision of local services or amenities. Members of Sivepe and other villages decided to rebuild together on land near Sasembata (E. Waddell: personal communication). Staff of the mission have for many years favoured this type of settlement among its Orokaiva [65] parishioners.[2] Although, with consistent effort, patrol staff of the Department of District Administration achieved the periodic amalgamation of pre-eruption villages, the department did not endorse the recent move and pointed out that councillors acted independently of any decision of the council or advice of its executive.

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[1] Mentioned by Belshaw, 1951. [2] See Crocombe, 1964:31.

Chapter 3

Land tenure and social structure

a. The tribe and clan as territorial or political units

128 [614] [619] This section outlines the range of wider common territorial interests and concerted political action among traditional groupings. Clans are the largest units in which membership is determined by patrilineal filiation as distinct from the local allegiance underlying membership of the tribe, and of the 'district', village, etc., into which the tribe may be divided.

619 The tribe is the largest unit which has a common territory (Williams 1930:156-7). This is usually isolated from neighbouring tribal territories by a belt of uninhabited country and its occupants would speak of it as 'one ground', pusu tahavo. The territories of groups of various orders of inclusiveness within the tribe are also described in this way (see Williams 0.364; 1930:157).

[829] Members of a group of any of these levels might consider themselves as toho, 'countrymen' (see Williams 1930:166; 0.100, 364). In another context a group would consider others in the same tribe as kitoho (outsiders, aliens). All members of the tribe shared common enmities so that at times they would regard themselves as toho whereas neighbouring tribes were always considered kitoho.[1]

[578] There were customary restrictions upon feuding within the tribe. As Williams (1930:309 ff.) points out, this political unit is the largest group with its own intragroup morality, in this case [266] sharply distinguished from the standard forms of hostility between [721] tribes. Aggression against members of another tribe took the form of organized, often cannibalistic raids (isoro).

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[1] Williams (1930:160) mentions exceptions where 'friendship or affinity between certain tribes allowed the use of the former word' (toho), but 'tribes...normally stand in the mutual relation of Kitohu' (sic) (ibid: 170; see also 0.100, 364).

each separated geographically from its neighbours.[1] There is also Williams' point (W.28) that in 1923 there was unclaimed land adjoining the 'hamlets' in the unit named Wasida (i.e., Jegasi-Sarahu). Like most other districts this consisted of two 'hamlet groups'. Norton (1962:6) says that sometimes villages, which 'are known to have been quite large' and stockaded (cf. Williams 1930:67, 164-6), were separated by tracts of unclaimed virgin land until the time of the suppression of feuding.

This combination for better defence may have been characteristic of tribes throughout the Orokaiva area. We believe, however, that the subdividing of the tribe into discrete named groups of named villages (either district or 'hamlet group') would be unique to the mountain Orokaiva in the culture area; we do not have enough evidence to show if this feature is related to the earlier clustering for safety, and to the greater population density in this tribe.

The emergence of tribal subdivisions at this level, however limited or occasional their independence, seems consistent with the uncertainties encountered by observers in seeking to determine the limits, the local name and the distinctive cultural and linguistic characteristics of the inclusive political unit.[2]

At this point we shall identify the local patrilineal groups to be mentioned in the following resumé of the history of local settlement and then make a preliminary comment on landholding by individuals.

The members of Jegase clan in Sivepo are divided among 4 named subgroups, each claiming to trace its origins to either of 2 contiguous villages occupied by all the ancestors of the Jegase in the neighbourhood. We shall call these subgroups lineages; they are Bebehupa,[3] Sesewopa, Berekipa and Arehu. A fifth lineage called Hambai or Hambai'embo has died out only in the present generation, yet all but the key members of the group and a little

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[1] Seldom does the territory of a 'district' at present clearly appear distinct from others, and that of a 'hamlet group' even more rarely.

[2] Either 'parish' or 'subtribe' could be considered as a term for such a unit within the tribe. But rather than add to the confusion of terms used in descriptions of local organization we retain the terms which we have already adopted.

[3] The suffix -pa (or -ja, female) should strictly be used in addressing or referring to an individual member, but it now seems to be common local usage to refer to a group itself in this way, and we shall follow this usage.

613 general information is already beyond the immediate recall of the surviving Jegase men.

The Sivepe people who belong to Timumu, the second clan represented in our sample, are members of 2 lineages, Pekuma and Hajejopa. Other than clanship the two can reckon no link originating in the 'district' from which both emigrated independently to the neighbourhood of Sivepe; their closely parallel histories of migration, subsequent residence and marriage account for the present firm connection between them.

The largest exogamous groups are lineages, but this rule readily lapses when a lineage achieves a much wider span than average, especially if it becomes scattered for any length of time or in more than one 'hamlet group'.

62 All land around Sivepe and neighbouring villages is divided into named areas which we will call 'blocks'. Each is usually a [103] locality deriving its name from a prominent local natural feature - often a tree or a grove of trees, hence Korinasusu or Korinaturu. [128] For any subdivisions of a block we use the term 'section' and we refer to either 'blocks' or 'sections' as 'parcels' of land.[1] No correlation is implied between the type of a parcel and the type of rights held to it.

423 All land constituting territory of the Jegase, Timumu or others [428] in the neighbourhood is divided into parcels which are the holdings either of individuals or of full brothers. A man's rights and other property are ideally inherited patrilineally. In some circumstances a definitive division of the father's land may be made among his sons before his death. This usually takes place if the sons already have their own households, if the father is no longer very active in village life or if the younger men are [562] only half-brothers. We know of no instances of a daughter receiving a particular share at the time of such an allocation, but we refer elsewhere to circumstances where women hold land 428 (see Appendix E, p.111).[A] In other cases brothers may jointly hold all the land inherited from their father. This seems to apply particularly to instances where a younger brother is unmarried or has taken temporary employment away from the village

[823] [1] People commonly use the name of a block to refer to any parcel of land, for instance in listing their landholdings. They draw attention to any specific distribution of sections of 1 block among different people only when the context requires them to. On Map 2, where 1 man holds adjacent blocks or 2 adjoining sections on 2 adjacent blocks, the boundary between them is not shown. Only boundaries between different landholders are indicated. [B]

A, [See Category 428, p. 111--Analyst] B, [See Category 102, p 40--Analyst]

Chapter 4

The cash economy

a. Income and expenditure[1]

Data collected from each household on its income and expenditure for 1962 are set out in Tables 6 and 7. There were no written records available to check the amounts which informants claimed they had received or paid but detailed discussions were held on each specific item and inconsistencies were re-examined. An average of $34 had passed through each householder's hands and he could fairly easily recall details of the major transactions.

Per capita income was approximately $6.60 for the year while expenditure was $8.20. The reduction during the year in the amount of cash in hand is due to the fact that individuals who had employment which terminated late in 1961 or early 1962 drew on cash reserves during 1962.

Of a total income of $328 for the 12 households, 27 per cent was derived from paid employment, 24 per cent from the sale of primary produce and 24 per cent from marriage payments; a further 13 per cent was money received from kin employed in other districts of Papua and 12 per cent came from kinsmen in the neighbourhood (see Table 6).

Major items of expenditure were store purchases of food, clothing, household utensils and other equipment such as a shotgun and torches. These accounted for 62 per cent of total expenditure. In many instances the goods were distributed or shared among 2 or 3 households of the expanded family and sometimes more widely than this. Some householders shared the receipts of large bride price with other kin during the year but no one had had to contribute to bride price payments on behalf of kin. Of $410 paid out by the 12 householders in this period 22 per cent

[1] Figures given in this section are corrected to the last digit given.

8: Waddell & Krinks E-4,5 (1964-1965) 1968 OJ23 Orokaiva OJ23

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interviews, expressed opinions, and other relevant data. Daily meteorological observations were made in Sivepe village.

The survey was conducted over three separate periods during 1964-65: 3 February to 3 May, 20 July to 30 August,[1] and 9 November to 3 January. These periods were selected, on the basis of available rainfall data and information in earlier Northern District studies, to cover supposed seasonal variations in weather and hence variations in the intensity of different social and economic activities.[2] Due to the intensive nature of the enquiry, it proved difficult to extend day-to-day investigation beyond two months.

In addition, the researchers spent some time in the Northern District and Port Moresby collecting demographic and economic statistics, information on marketing facilities and the policies and activities of the external agencies operating in Popondetta sub-district. This information was designed to place the selected villages in a regional perspective.

The gathering of field data was shared equally between the authors, with Waddell working in Sivepe village and Krinks in Inonda; each is therefore responsible for the sections specifically dealing with his respective village. Joint responsibility is assumed for Part I but the preambles and discussions in Parts II and III and the whole of Part IV are attributable to Waddell.

Acknowledgments

The study was made possible by a generous grant from the Rural Credits Fund of the Reserve Bank of Australia. In the execution of it the authors owe their principal debt to the residents of Sivepe and Inonda villages for their patience and co-operation over a period of more than seven months when they were exposed to often seemingly indiscreet daily observation and questioning. Vivid memories are retained of their hospitality and friendship. Amongst them Mr Stephen Oriri was pre-eminent. The important role played by our Orokaiva assistants, Messrs Kephas Gibobo, Walter Sivure and Nigel Tiriembo, must also be acknowledged.

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1 In the case of Inonda, no data were collected in the tenth week of the first period, and the second period was from 27 July to 6 September.

2 It is appreciated that this is an arbitrary basis if one considers the concept of a year to be valid only in terms of seasonality of climate. The various facets of social and economic activities might operate on cycles of different and varying lengths, as evidenced by the 'pig cycles' of the New Guinea highlands.

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Many expatriate residents of Papua-New Guinea - public servants, missionaries and settlers - gave freely of their experience and provided practical assistance and hospitality. In particular, we are indebted to Mr and Mrs V. Cooke, Mr and Mrs R. Cheetham, Messrs W.J. Fielding and W. Johnston, Mr and Mrs R. Price, Mr G. Pritchard, Mr and Mrs C.E. Searle, and Messrs R. Spinks and L. Williams. 128

Instruments used in the gathering of meteorological information were lent by the Commonwealth Bureau of Meteorology, Melbourne. [12C]

At the Australian National University, Drs D.G. Bettison and R.G. Crocombe conceived the original idea from which the study developed and gave advice in both its planning and execution. Mr G.R. Hogbin and Dr R.T. Shand also offered suggestions at various stages, while Dr H.C. Brookfield and Messrs E.K. Fisk and M. Rimoldi commented extensively on the drafts. Miss M. Rose wrote most of the computer programmes and Mr R. Watts also helped at a late stage; Mrs A.M. Johnson did much of the tabulating of data; Mr M. Pancino and other members of the Cartography Section drew the maps and diagrams, while Mrs A. Guenot typed the final draft, and in the process, reduced many of the tables to manageable proportions. Our debt to all these people is considerable for, in terms of the volume of data handled, the study was truly a co-operative effort.

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Abbreviations

CSIRO	Commonwealth Scientific and Industrial Research Organisation
DASF	Department of Agriculture, Stock and Fisheries
DDA	Department of District Administration
FAO	Food and Agriculture Organisation
IBRD	International Bank for Reconstruction and Development
LGC	Local Government Council
OCGS	Orokaiva Coffee Growers' Society
PWD	Public Works Department

Note on data tabulations

Wherever discrepancies occur between the total and sum of figures in a column these are due either to rounding or the fact that all the data are expressed in terms of mean hours or mean transactions (per man-day or per man-week), in which case the total means are not derived directly from the individual means.

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Chapter 1

The physical and social setting

This chapter summarises the physical and social background to current attitudes to cash cropping among the Orokaiva. 128

The physical environment

(a) Landforms (see Map 1)

Lying between the main New Guinea cordillera and the Pacific Ocean, the Popondetta sub-district[1] has a great variety of landforms and soils and, to a lesser extent, of vegetation.[2] Bounded on the south-west by the foothills of the Owen Stanley Range (4,000 ft) and on the south by Mt Lamington[3] and the Hydrographers Range (4,000 to 5,000 ft), the area comprises a broad plain sloping gently north-eastwards to the Pacific Ocean. Three elements may be distinguished within it: strongly dissected piedmont terraces, alluvial plains of volcanic materials (to the north-east of Mt Lamington) and flood plains from 10 to 25 miles wide extending from the terraces to the coast. All characteristically support primary or regrowth lowland forest except in the relatively drier and sandy areas, particularly on the plains north-east of Mt Lamington, where there are extensive stretches of grassland. 131 133 133 [137]

The CSIRO (Division of Land Research) considers (1964:17) that although there is more poor than good land in this area, 'some of the best land in the Territory' occurs on the gentle northern foot slopes of Mt Lamington and in parts of the flood plains where fertile volcanic soils and stratified sediments with a high organic content have developed. The major factors limiting land use are steepness of slopes in the mountain zone, and poor drainage and flooding in the lowlands. Soil deficiencies do not appear to be a serious limiting factor. 311 133

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[1] An area of 3,712 square miles.

[2] The following description is derived from CSIRO 1964:10-15.

[3] A volcano which last erupted in 1951, resulting in extensive destruction and loss of life.

Chapter 3

The village economy

This chapter describes briefly the Orokaiva pattern of production and distribution, with particular reference to Siveps and Inonda.[1] Traditionally the villager operated within quite narrowly circumscribed physical limits. Each community functioned largely as an independent subsistence unit, almost all the requirements of life being produced through shifting agriculture and the subsidiary pursuits of fishing, hunting and foraging on its own land. Production was directed almost entirely to immediate and direct consumption, none of the staple foodstuffs except yams lending themselves to storage; exchange was confined largely to kindred within the community or in closely neighbouring communities. Beyond this, minor and informal trade links had developed between some of the inland and coastal peoples, but the degree of inter-dependence established can be considered insignificant.

The contemporary economy comprises both subsistence and monetary sectors, with the former dominating. Most money traffic is with the non-agricultural sector of the national economy and there is little movement of money between subsistence units.

(a) The subsistence sector

(1) Production. The pattern of subsistence production is, as yet, little modified by cash cropping, in spite of the latter being based on permanent tree crops which involve substantially different agricultural practices.

Gardens are made in secondary growth where the forest has regenerated over a fallow period of about ten years. Little primary forest survives among the Mt Lamington Orokaiva and, even where it does, secondary growth is preferred for gardening as it is easier to clear. In addition to the shifts in garden locations, many settlements also change sites at frequent intervals, the cycle appearing to be a little longer than the cultivation cycle. All

[1] More detailed descriptions are given in Crocombe and Hogbin 1963:7-13, Dakeyne 1965:54-92 and Rimoldi 1966:13-28.

592 The average size of households[1] is 4.5 persons, otherwise expressed as 2.4 labour units.[2] Of the fifteen households in the sample at the beginning of the survey, only four had individual [249] holdings of cash crops and one man started a holding during the survey (coffee in all cases). Everybody had rights of access to a communal rubber plantation which was tapped by individuals on a rota system.

464 Most household heads have worked for wages as unskilled or semi-skilled labour (plantation workers, rubber tappers, domestic 871 servants and labourers for the Australasian Petroleum Company). The highest level of education reached by any householder was standard II.[3] Standard IV is the highest level attained within the sample (including children), although one absentee completed standard VI at a government school at Kokoda.

622 Although the sample includes the local government councillor for Sivepe and the adjoining villages of Binduta and Awala, he only recently arrived in the village and exerts limited authority.[4] [241] The village as a whole possesses no universally accepted spokesman or leader[5] and the repeated failure of communal ventures[6] may be related to this fact.

Economic holdings

433 Within the subsistence sector, a key factor in the pattern of exchanges is the fluctuating resources of particular foodstuffs in production at a given time in a given household: when an individual has no producing taro he is dependent on others, when he has excess he distributes. Significantly, at the time of the survey of

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[599] [1] For the purposes of this survey, a household is a group of people gardening, cooking, eating and budgeting together. It is basically the nuclear family, perhaps including unmarried kin or widowed or divorced parents (although these may operate as independent households). The household invariably resides under a single roof. Cases of two households living together occur and their frequency in Inonda helps explain the larger mean size of house.

[128] [2] Labour units were calculated on the following basis:

Age	5-9 years	10-14	15-19	20-44	45+
Male	0.1	0.3	0.8	1.0	0.8
Female	0.2	0.4	0.7	0.8	0.6

[554] [3] See Appendix 1.A [4] See Rimoldi 1966:55-6.

[5] One man, adopted into Timunu clan, is asserting himself increasingly through his generosity, organising ability and industriousness.

[6] See pp.44-5 and Rimoldi 1966:84, 107-8.

A, [See Category 871, p. 307--Analyst]

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would in effect be wasted, since at some point there is no alternative but to wait for crops and animals to mature. Similarly, in these three processes, failure of one member of the production organization to perform his role correctly would not ordinarily result in failure of the entire process. What is not done today can be done tomorrow, and what one person fails to do another can do at another time.

In fact it will be demonstrated that it may well be the particular nature of work in these societies which inhibits the extension of cash cropping and the fuller utilisation of available labour time. It is with these considerations in mind that the data relating to the activity patterns of the adult residents of the two villages are presented and analysed.

Method adopted

125 The characteristics of the sample communities have been described in Chapter 4. The survey of activity patterns was confined to the adult members of these communities (i.e. those over the age of about fifteen years) in view of the very restricted amount of work observed to be done by younger people. By so doing a larger number of households could be included in the survey than would otherwise have been possible. The actual size of the samples was restricted, in the case of Inonda, by the population of the village itself while, at Sivepe, logistical considerations prevented more than 30 to 35 adults being surveyed at one time. The technique used was one of daily interviews associated with observations of all individual movements in and out of the village.

[124]
[123]

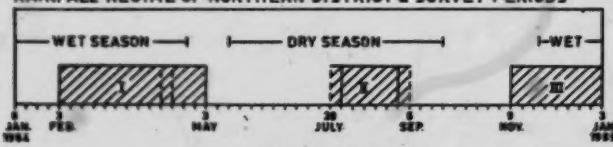
128 Data were collected over three distinct periods amounting to a total of twenty-seven weeks,[1] the periods being selected in such a way as to cover expected seasonal variations in activity patterns (see Fig.3:1). Treating each community separately the form of presentation is such as, firstly, to describe its basic behavioural characteristics for the duration of the survey and for the individual periods, and secondly, to isolate internal variations, most particularly between cash and non-cash croppers but also according to such criteria as age and sex. All activities are covered, with the exception of eating, resting and sleeping; an activity being defined as covering all time spent between departing and returning to the village (or, in the case of intra-village activities, the start and finish of the task) and so including such related events as time spent travelling and resting. Some activities have, however, been broken down for further analysis on a detailed time and motion basis.

[1] Twenty-six in the case of Inonda.

8: Waddell & Krinks E-4,5 (1964-1965) 1968 OJ23 Orokaiva OJ23

FIGURE 5:1

RAINFALL REGIME OF NORTHERN DISTRICT & SURVEY PERIODS



On account of periodic variations in the size of the samples and so in the number of man-days covered in each survey week (due to permanent arrivals and departures plus temporary absences), activities performed are everywhere expressed in terms of 'hours per man-day' and 'per man-week' actually resident, residence being defined as including time spent sick. This conversion of all data from totals to means obscures the distinction between activities occurring regularly, such as subsistence gardening, and those which occur only sporadically, for example, house construction, particularly where the latter are characterised by short periods of intensive work. However, the conversion does permit realistic estimates to be made of the labour requirements of different tasks over extended periods.

All the data, with the exception of those involving absences in excess of twenty-four hours from the village and periods incapacitated through sickness, were recorded on punch cards and processed by computer. However, in the case of absences and sickness the data were of a more imprecise nature and only simple manual analyses were carried out.

461 the principal source of cash, where the returns to labour are relatively low.[1] Here families of procreation and orientation often form a single work group where parents, without cash crops of their own, are called upon to assist their children. The work groups are largest (2.9 persons) for pulping where the crude methods used are especially inefficient. The marketing of rubber involves work groups of a mean size of 1.9 persons since the product has a higher weight-value ratio than coffee and is also bulkier.

A relationship appears to exist between the 'hardness' of the work (in terms of energy expenditure and the capacity of one person to handle it) and the size of the work group. The affiliation of members of such groups is extremely varied and appears to be based largely on considerations of residence as it is exceptional for members of a Sivepe-initiated work group to be drawn from outside the village.

Apart from the activities described there is a variety of communal tasks initiated by an external agency and there are others which apparently originate elsewhere but operate through an agent within the village. Establishment of the communal cash crop garden and the pre-Christmas hunting drives both fall within this latter category and work groups exceeding twenty people were often associated with them. Of the two, the hunting drives were most successful since the type of organisation and techniques used were essentially traditional - beaters drive the game towards a long staked net where they are speared by the netsmen.

[224]

[476] Because of relative unfamiliarity with most forms of co-operative effort, communal activities initiated by the external agencies generally prove unsuccessful. Where they are customary, as in sago-making, an immediate return against assistance rendered is frequently obtained. No such immediate or tangible returns are associated with many of the communal activities initiated by the external agencies.

The activity patterns of selected individuals

128 The preceding pages have been concerned with a strictly quantitative analysis of the behaviour of a population of 36 adults. Here closer consideration is given to six individuals, representing a range of 'types', with the object of exploring possible relationships between work and the more qualitative factors of family, status, values and aspirations.

159 554 Linton. The main material criteria used in assessing individual status are diligence in work, generosity, wealth in terms of both cash and traditional valuables (di-hambo) and abundance of yams. By all these standards Linton ranks very highly in the village.

[1] See p.292. A 4

A, [See Category 433, p. 292--Analyst]

monetary exchange system in a single society and of the society's social system to the processes of commercialisation. 121

Method adopted

The approach adopted to the analysis of exchange is similar to that of activity patterns, with parallel observations being made on the same sample.[1] To simplify quantification and accurately determine the place of individual households within the exchange system, the basic unit of measurement adopted is the transaction rather than the good or service, the act of giving or receiving being identified as such. Thus, in the case of goods or services exchanged between two members of the sample, each is recorded twice - against the donor and the recipient. While most goods entering the exchange system are only transacted a single time prior to consumption certain items, particularly pigmeat, may change hands a number of times, with some subdivision on each occasion. Therefore the sum of transactions does not necessarily reflect the sum of goods and services exchanged by the sample as a whole but rather that of the sum of its individual members grouped into households.[2]

Five broad categories of goods and services are identified - subsistence produce, cash crops, labour services, storebought goods and cash - but the distinctive nature of each precludes the application of a single system of measurement. Instead three are used - weight (in lbs) for subsistence produce, time (in hours) for labour services, and monetary value (in $) for the others - and each category is discussed separately.

Further, on account of the part-subsistence part-commercial nature of the village economy, transactions fall into two broad systems - subsistence and monetary - within which both the ideal and actual form of exchange is often radically different. Thus, initially, the data are presented in such a way as to demonstrate the total volume of transactions falling within each system; thereafter the two are amalgamated and the seasonal fluctuations in exchanges, together with the area over which they operate and their relationship to kin and to the several socio-economic groups identified, are considered. Finally the exchange patterns of individual households are discussed, to include data on income and expenditure of cash during the eleven months within which the detailed surveys fell (February 1964 to January 1965). 128

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[1] In fact this survey only commenced in week 2 - at the beginning of the week in Inonda and mid-way through in Sivepe.

[2] Although all transactions are related to individuals, intra-household ones are disregarded. In effect, therefore, the 'minimum transacting unit' is the household.

of each in the food pattern, the proportion of total production of goods entering into the distributive system varies considerably, being related to both its degree of scarcity and the circumstances of the exchange.

Taro, being the staple food, is normally readily available to all households from their own resources and it is estimated that only about 4 per cent of total production enters into distribution.[1] Of this figure over half (56 per cent) circulates within the village, usually in the form of individual plates of cooked food distributed after the evening meal is prepared. These evening distributions are initiated by the first to prepare their meals, and offered to those returning later to help allay hunger until their own food is ready. While the principle of reciprocation applies on such occasions individual exchanges are not accounted for. This applies equally to areca, lime and pepper which are casually distributed at gatherings.

Of foods which are resorted to in the dry season, particularly sago and breadfruit, a much higher proportion of total production enters into circulation. Well over half the sago produced is distributed, specifically to compensate for assistance rendered in its working, but more generally in recognition of the general scarcity of food and of an obligation among those endowed to share their stocks with the less fortunate. Even in such instances, however, the manner in which it is distributed stresses particular relationships.

Custom requires that an individual should not eat the meat of a pig which he has reared himself or of wild game which he has caught. Consequently virtually all meat 'produced' enters into the exchange network, the only observed exception occurring when a pig breaks into a garden and the owner endeavours to kill it himself. Even in

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[1] This figure was determined by using yield data gathered in Sivepe during 1961-62 by the FAO Survey of Indigenous Agriculture. It was estimated that 159 persons produced 298.1 tons of taro in one year from 51.4 acres. Assuming the acreages to be constant the FAO survey estimates an individual requirement to be 0.34 acres per annum and Rimoldi (1966:20) estimates 0.36 acres - a yield of 5.5 tons per acre is obtained. (This includes area under other crops, but taro accounts for 80 to 90 per cent of the total acreage and it is assumed this proportion is constant.) Thus one individual produces 1.87 tons from 0.34 acres.

Using the ratio 70:36 of adult to individual acreage (Rimoldi 1966:19) an adult produces 3.63 tons from 0.66 acres. The present survey covered 4,741 adult-days (man-days) or 12.9 adult years. A yield of 46.8 tons was therefore obtained. During the same period 1.9 tons of taro - 4.1 per cent of total production - was disposed.

[TEXT CONTINUED ON PAGE 187]

Appendix 3

Definitions of terms used

128 Individual activities

Church services	All forms of religious services.
Church work	Work carried out voluntarily for the mission.
Clearing	All activities associated with the preparation of land for planting; e.g. the selection of a site, cutting down trees, undergrowth and grass, burning and piling up burned debris..
Construction	The collection of materials for and the erection, maintenance and demolition of village houses and shelters.
Cooking	The preparation of food for consumption, including the making and tending of the fire on which it is cooked.
Council work	Cleaning the village site, cutting grass on the surrounds, maintaining roads, constructing rest houses, schools, aid posts, bridges. Attending council meetings and making tax payments.
Entrepreneurial	Activities undertaken to make money through the provision of services to others, e.g. a trade store, copra drier or coffee huller where others pay for the facilities or services. Includes the purchasing of trade store supplies.
Fencing	The collection of materials for, making and maintaining fences.
Gathering	The collection of foodstuffs by foraging, both insect grubs and vegetables.
Harvesting	The collection of all cultivated foods.

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Maintenance	Weeding, pruning and cutting undergrowth around cultivated foods, and including garden 'inspections'.
Marketing	The sale of produce for cash, at a market, by hawking or informally.
Meetings	All formal gatherings, either sponsored by the external agencies (census-taking, court cases, political meetings, Mothers' Union, Women's Club, OCGS, Oro Ltd) or organised within the village to settle disputes.
Miscellaneous	Clearing the new village site, errands, gambling and any other minor activities unrelated to the listed categories of activity.
Mourning	Refers strictly to the mortuary ceremonies conducted prior to the burial and not to any protracted periods of seclusion involving the immediate kin of the deceased.
Paid work	All types of employment, regular or casual, characterised by direct cash remuneration, e.g. the construction of buildings under contract, road labour and acting as an Administration interpreter.
Preparation of tools and equipment	The collection of materials for and fabrication of tools used in hunting and gardening (spears, axe handles, etc.), mats and baskets and articles of a ceremonial nature (e.g. feather head-dresses, etc.).
Processing	All stages of the preparation of coffee and copra for sale following their harvesting; therefore the pulping, fermenting, washing and drying of coffee and the splitting and drying of coconuts for copra.
Recreation	The participation in or observing of such sporting activities as football, and picnics.
Sago-making	All stages of the preparation of sago from the felling of the tree to the drying of the sago flour.
Sickness	The manual analyses deal with time immobilised through sickness while the detailed survey

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refers specifically to clinic visits and related public health activities only.

Grouped activities

External agencies	All those organisations associated with the external sector of the economy, therefore encompassing purchasing, church services and work, council and meetings.
Household	Encompasses collecting firewood, cooking and washing clothes, pots and dishes, etc.
Other subsistence activities	Encompasses the preparation of tools and equipment, construction.
Other subsistence food production	Encompasses fishing, hunting, gathering and sago-making.
Social obligations	Encompasses marriage, mourning (death), other ceremonial (e.g. feasts, parties) and informal visiting.
Subsistence gardening	Encompasses the planting, maintaining, harvesting and marketing of all cultivated food crops together with the fencing of the gardens.

Activity terms relating only to Chapters 6 and 7

Ancillary tasks	Relating to the main activity, e.g. sharpening tools, carrying out garden magic, erecting and repairing sluice in sago-making.
Main task	The named activity.
Other tasks	Unrelated tasks carried out generally as a product of the opportunity provided by the main activity, e.g. foraging or collecting firewood incidental to doing other garden work.
Travelling	The movement between village and location of activity.

Exchanges

Gift exchange	A non-monetary exchange conducted according to the customary pattern and normally characterised

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by reciprocation, either immediate or delayed, of goods or a service to an equivalent value. Such exchanges are normally restricted to kin.

Monetary exchange — A cash-based transaction where there is a direct and immediate exchange of goods or services against money.

Transaction — The act of receiving or giving goods or a service.

Various

Cash cropper — A member of a household which is directly exploiting cash crop holdings, either individual or communal.

Man-day, man-week, etc. — A unit of measure derived from the sum of the periods of residence of all adult persons, exclusive of all absences, temporary or otherwise.

Note. The terms 'dry season', 'earlier part of the wet season' and 'latter part of the wet season' are used interchangeably with survey periods II, III and I respectively.

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Preface

125 In this study, carried out between February and April 1963,
[101] seven groups of adult male Orokaiva were tested using a culture-fair test of cognitive ability. There were 20 men in each group, making a total sample of 140.

153 Differences were found between some of the groups; one village obtained significantly higher test results than the other groups and another significantly lower test scores than all others except one.

Some of the total samples were divided into three groups according to productivity or ownership of cash crop trees. There was found to be a significant difference between groups. Those who were most productive tended to have the higher test scores.

128 A principal components factor analysis revealed three factors. Tentative identification suggests a memory factor, a gestalt factor and a less certain third factor.

122 Gratitude is expressed to the New Guinea Research Unit of the School of Pacific Studies, Australian National University, for the financial support which covered field expenses and the cost of travel to Papua.

114 Special thanks are due to Mr Cromwell Burau of the staff of the Unit whose company, assistance and help matched with his special skills made the field work so profitable and enjoyable.

Gratitude is also expressed to Mr I.G. Ord, Chief Psychologist of the Public Service Commission in Port Moresby, for his interest and encouragement in this project. It was his initial research that developed the test and made this project possible.

[p.4 is blank]

Table 3

153 Means and standard deviations of the test data and rank order of mean test results

Village or sample	Mean	Standard deviation	Rank order
Beporo	33.85	8.83	1
Ex-servicemen settlers	27.40	10.13	2
Borugasusu	23.95	7.76	3
Inonda	22.55	10.23	4
Plantation labourers	21.95	9.14	5
Sivepe	20.50	10.24	6
Ongoho	16.25	7.97	7

153 The inter-correlations of all test scores, age and educational
128 background tests are presented in Table 4. The correlation statistic was Pearson's product-moment coefficient.

It must be pointed out that the supplementary data in the last three columns are very rough approximations only. Age had to be estimated, as most testees were unaware of birth dates. Often such events as the eruption of Mt Lamington or the Japanese invasion were used to estimate approximate age. In the initial analysis, age was found to correlate negatively with every other variable. The signs of correlations could be changed, and the variable called 'youth' if so desired. The standard reached at school and the number of years spent at school were also unreliable, but not to the same degree as age.

An analysis of variance was computed to find whether the difference between the groups was significant. The results in Table 5 below show that it was.

The F ratio indicated that there was a real difference between the samples $F = 6.931$ ($p<0.01$); therefore t tests were calculated to investigate which samples were contributing to this significance, i.e., which samples were really different.

The t values are included in Table 6 below.

Table 4

Correlations for each test

	Cube Imitation	Bead Threading	Passalong	Form Assembly	Pattern Matching	Kim Game	Gestalt Continuation	Total test score	Age	Standard reached	Years at school
Cube Imitation	-	542	273	554	334	413	397	687	-186	394	339
Bead Threading		-	337	460	244	251	255	569	-213	237	239
Passalong			-	261	435	364	386	610	-338	383	350
Form Assembly				-	494	265	448	650	-166	411	358
Pattern Matching					-	415	613	720	-309	639	584
Kim Game						-	405	790	-331	379	329
Gestalt Continuation							-	682	-385	492	416
Total test score								-	-410	597	530
Age									-	-575	-530
Standard reached										-	906

Decimal points have been omitted.

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Table 5

Analysis of variance between the samples

Source	Sum of squares	d/f	Variance estimate	F ratio	Significance
Between samples	3,737.2	6	622.866	6.931	**
Within samples	11,951.0	133	89.857		
Total	15,688.2	139			

** denotes significance $p<0.01$.

Table 6

The t values between the samples

Sample	Beporo	Ex-servicemen settlers	Borugasusu	Inonda	Plantation labourers	Sivepe	Ongoho
Beporo	-	2.09*	3.67**	**	**	**	**
Ex-servicemen settlers		-	1.17	1.5	1.7	2.1*	3.8**
Borugasusu			-	< 1	< 1	1.2	3.0**
Inonda				-	< 1	< 1	2.1*
Plantation labourers					-	< 1	2.1*
Sivepe						-	1.4
Ongoho							-

The samples have been arranged here in descending order of magnitude.

* denotes significance at $p<0.05$.
** denotes significance at $p<0.01$.

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Relationship of test score to productivity

153 The task of adequately assessing the productivity of each individual proved more difficult than anticipated. The field data forms did not give ready access to information which could be coded or scaled as to productivity. There were considerable differences in the manner in which the various field workers collected and recorded information. There was also a disparity between the sample of the author and that of other research workers. The New Guinea Research Unit was asked to rate the testees for whom information was available. They divided them into three categories of those having more than 500 cash crop trees, those with some cash trees but less than 500, and those without cash crop trees.

Altogether only 46 testees were able to be so categorized. Of these 5 were placed in the first category, 20 in the second category, and 20 in the third category. Another testee who had no trees but was in paid employment as a clerk was placed in the first category bringing the total to 6. The data for these categories are shown in Table 7.

Table 7

Mean test scores for the three categories

Category	500 plus trees	1-500 trees	No trees
Number of testees	6	20	20
Mean no. of trees	1035.6	134.3	0
Mean test score	36.0	24.5	18.4
Standard deviation	9.62	9.34	10.63

Three t tests were calculated to determine whether the differences between the mean scores were significant. It was predicted that there would be a positive relationship between categories and test score, therefore it was decided to use one-tail tests of significance. The t value between the first and second categories was 2.522 which is significant at $p<0.01$; between the second and third categories, a t value of 1.879 was found which is significant at $p<.05$; and between the first and third categories, a t value of 3.499 was obtained which is significant at $p<0.001$.

A principal components factor analysis was used to examine the factor content of the test. Only the test correlations (the first seven variables in Table 4) were used. Three factors were extracted. These are shown in Table 8.

Table 8

Unrotated factor loadings

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Test	Factor I	Factor II	Factor III	Communalities
Cube Imitation	80	-36	-28	85
Bead Threading	-	-22	92	90
Passalong	59	-54	-	64
Form Assembly	83	32	-	81
Pattern Matching	68	28	36	67
Kim Game	72	-37	-	66
Gestalt Continuation	69	63	-	88
Variance	44.8%	17.0%	15.4%	

Decimal points have been omitted and loading of less than 0.20 left blank for ease of reading.

These factors were rotated using the varimax unadjusted method and are shown in Table 9.

Table 9

Factor loading rotated to a varimax unadjusted solution

Tests	Factor I	Factor II	Factor III	Communalities
Cube Imitation	89	21	-	85
Bead Threading	-	-	95	90
Passalong	78	-	-	64
Form Assembly	46	77	-	81
Pattern Matching	27	69	34	67
Kim Game	78	-	-	66
Gestalt Continuation	-	92	-	86
Variance	33.0%	28.4%	15.7%	

Decimal points have been omitted and loading of less than 0.20 left blank for ease of reading.

Discussion

In this paper the term cognitive ability is used in preference to the more commonly used term intelligence. The latter term has come to have a connotation by common usage which leads to ambiguity. Cognitive ability is used to mean 'thinking' or 'reasoning' abilities in their broader sense.

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continues, a pattern of farmsteads set in consolidated, individual holdings may well replace today's villages and hamlets with their fragmented, widely-scattered landholdings. 361 178

Acknowledgments

This paper is portion of a wider study of Yega land use and settlement. The author gratefully acknowledges assistance and advice from colleagues in Australia, from officers of the Administration in Papua and from members of the A.N.U. New Guinea Research Unit. Field work was financed by research grant from the University of Sydney. 128 122

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Introduction

Since the end of World War II there has been a rapid development of co-operative marketing and retailing and in some cases production amongst the indigenous people of Papua.

This paper describes the origin of the co-operative movement in the Northern District and its subsequent development and modification particularly as applied to Yega.[1] The Yega were one of the first groups to organize a producers' co-operative, under the guidance of the local Anglican Mission. The movement rapidly extended to other groups of Orokaiva.

The development of agricultural co-operatives

As early as 1940 the Reverend James Benson of the Anglican Mission at Gona had begun to preach the virtues of co-operation. Benson was imprisoned by the Japanese but returned to Gona in 1946. The first mention of any co-operative in the district comes as a brief entry in his diary on 6 October 1946, 'Foundation of Gona Public Trust' (G.P.T.). The functions of the G.P.T. are not clear beyond the fact that it was organized as a committee or board - entirely Papuan in composition, with Father Benson as advisor - aimed at investigating ways and means of improving standards of living.

One of the most dynamic and influential members of the G.P.T. committee was Samuel Ungega from Goube village. He was a member

---

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I

The inclusion of cash in bride-wealth is now widespread in Papua-New Guinea. Before cash was introduced, ornaments made from shells, pigs' tusks, dogs' teeth, animal fur, etc., and feather head-dresses, household utensils, pigs and food were commonly exchanged for brides in most, if not all, parts of the country. These things are still given in the majority of bride-wealth exchanges, even when the people consider cash the most important component. Bride-wealth is usually exchanged between two groups, one associated with the bride and the other with the groom, with the result that a considerable number of people is associated with any one exchange.[1]

We do not know the volume of cash exchanged annually in bride-wealth in the country nor the rate at which this volume is changing, but the information available suggests that a significant proportion of the cash in the indigenous sector of the economy is involved. For example, in Hanuabada village near Port Moresby (where the legal minimum cash wage is a little over $300 per annum) bride-wealth including more than $2000 in cash has been paid for a single marriage. In many rural areas, the ratio of cash in marriage payments to cash incomes is also high. In a Siane village in the Eastern Highlands, where the average annual cash income per household in 1965 was less than $100, I counted $240 cash in one bride-wealth exchange and $180 in another.

There is insufficient information to permit analysis of the implications which certain practices in the indigenous sector have for the growth and functioning of the cash economy of Papua-New Guinea. These practices include bride-wealth exchanges, cash gift exchanges, gambling and hoarding. They may be beneficial to economic growth in that they may provide incentives to produce goods and services for sale. Also they may facilitate cash

---

[1] The collection of data for this paper was made possible by the generous co-operation of numerous people from Inonda and nearby villages, especially Stephen Oriri and Jack Umbarapa. Dr R.G. Crocombe kindly assisted in the preparation of the report; Mr C. Burau explained marriage customs among the Orokaiva; and Miss P. Richardson, Mr M. Rimoldi and Mr P. Krinks gave helpful suggestions for revision.

583 to cook and serve the food. The ultimate recipients of these were
123 not ascertained. Secondly, most recipients were from Mosou and Ajoro, villages in which there were many clans. Complete analysis was not possible because detailed genealogies were not collected and because both the father and mother of the bride had genealogical links with Mosou village. Nevertheless, sufficient information was collected to indicate some of the principles underlying the distribution.

583 Households which shared in the bride-wealth have been catego-
[123] rized according to the head's approximate relationship to the bride (see Table 4).[1]

Category 1 included the households of the bride's father and brother. These men controlled the distribution of the cash and retained just under 90 per cent, each taking $35. Although the father directly controlled the distribution of the more valuable traditional ornaments almost all the non-monetary components went to other households.

Two other local households of the Andiriha received shares of the bride-wealth (category 2). Their shares were small, possibly because they were of neither the bride's nor the groom's lineages and were therefore to some extent in a neutral position regarding the marriage (see also page 96).

Only one household of the Andiriha clan from a distant village (category 3) shared in the bride-wealth and the share was very small. This parallels the small contributions of the two distant households of the groom's lineage. The only Andiriha households known by the Inonda people to have taken no part in the marriage were from Hanakiro, a village about 20 miles away.

A large number of households with heads affinally and matrilineally related to the bride's father (category 4) received modest shares of the bride-wealth. The genealogical ties of three of these households were reinforced by assistance which the heads had given with the ceremonies performed when the bride attained puberty, at which time her father was absent from Inonda. Some households in the category had genealogical ties to the bride's mother as well.

---

[1] It is possible that I was not aware of some cases where two or more recipients lived in the same household and if so, they have been listed in Table 4 as separate households. For example, an aged woman and her son may have received separate shares. Their relationships to the bride, as described to me, would not indicate whether they were in the same household and they would be recorded as separate households.

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Land, work and productivity at Inonda

by R.G. Crocombe & G.R. Hogbin

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new crops and techniques of production; and which is best adapted to the emerging patterns of social and work organization. It is also hoped to obtain information on the factors which influence the peoples' preferences for one or another of the systems of land tenure and work organization.

It is appreciated that no two human groups are strictly comparable, and that there are cultural, geographical and economic differences between different parts of the Orokaiva area. On the other hand, there is a sufficient degree of homogeneity to allow some useful comparisons to be made between those who follow each of the various "roads" to economic change.

This paper contains the results of the first study undertaken. It was carried out in the Higaturu Local Government Council area at the village of Inonda, which is one of the small, widely dispersed Orokaiva villages which are typical of the flat eastern portion of the area. A second study within the Council area has recently been completed at the village of Sivepe, which is cooler, more hilly and more fertile than Inonda, and typifies the larger, more populous villages of the closely settled western area.(1) The results of research in other parts of the Orokaiva area will be published in the coming months.

We wish to record our gratitude to the people of Inonda for their generous co-operation, to Mr. Cromwell Burau for interpreting not only the language but also the culture of the Orokaiva people for us, to officers of the departments of Native Affairs and Agriculture for advice and assistance, and to Dr. D.G. Bettison and Mr. M. Rimoldi for assistance in revision of the final draft. We also gratefully acknowledge the assistance of the Rural Credits Development Fund of the Reserve Bank of Australia.

(1) Population density in the Saiho census division (which includes Sivepe) is 78.9 persons per square mile, which is the highest for the Higaturu Council area. Density in the Buna census division (which includes Inonda) is 7.7 persons per square mile, which is the lowest in the Council area.

241 The supplementary food plants provide both variety in the diet and some insurance against failure of either of the two main crops. Corn matures within two or three months and can be planted amongst the taro if a food shortage appears to be imminent. [262] Both wild and cultivated sago is used as an emergency food. There is usually a shortage of garden crops at the end of the dry season, and this is overcome by making sago. Sago is only eaten at other times when large quantities of food are needed for feasts.

The boundary of a food garden remains recognizable for about three years from the time of clearing. By then the garden is covered with either regrowth or kunai and is no longer 126 producing food. All food gardens with recognizable boundaries were surveyed by chain and compass and the area of each garden calculated.(1) The date on which the vegetation had been cleared for the preparation of each garden was determined as nearly 241 as possible. The average area of land required for food gardens for the village as a whole was found to be 12.76 acres or 0.27 acres per head of population per year.(2) Areas of subsistence gardens at present being cultivated or from which food is currently being harvested are summarized in Table 2.

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(1) Maps on a scale of one inch to one hundred feet were drawn. These have been reduced photographically and are reproduced on pages 106-108.A

[128] (2) This figure was calculated by the following method. For each household, areas of all gardens with recognizable boundaries were determined and totalled. The date at which the oldest of these gardens was established was determined for each household. From this information the area of garden land required per month was established for each household. (For example if the total area of gardens made by a household over 27 months is 5.4 acres, then that household makes new gardens at the rate of 0.20 acres per month or 2.40 acres per year.) The area of new garden land brought under cultivation each month by the village as a whole was then calculated by totalling the area required per month by each household, and multiplied by 12 to give the area required per year. This figure divided by the population of the village, gave the area of land required for gardening per head of population per year. The area of 0.27 acres of garden land per head of population per year should not be confused with the area of land which people were cultivating at the time of the survey. This latter area (0.31 acres) includes land cleared but not planted, land planted with gardens not in production and land from which garden produce was being harvested at the time the survey was made. It does not relate to any period of time, but gives an indication of the area of land which the households were actually tending at that particular time.

A [See Category 102, pp. 106-108--Analyst]

Several villagers were asked separately to rank each kind of hambo and di in descending order of value. There was agreement as to the ordinal value of most items and the few discrepancies were eliminated by discussion with the elders.

We took a list of hambo and di from each household head and details of the person from whom he had acquired each item, his relationship to that person, and the reason for the acquisition (whether as bride-price or by barter, cash purchase or otherwise). Cash values for each type of di and hambo were assessed on the basis of average prices realized in known sales and purchases. Where the people could not recall an instance of the sale or purchase of a particular item, its value was estimated from its position on the scale of relative values given to us by the local people. Hambo were valued from £3 for daremo (though occasionally extra large ones sell for up to £20) down to 2/- for the more common articles. Most feathers are now so abundant that they have no cash value, but bird of paradise, ungaifawo and cassawary plumes are still sold. Further details of assessed values of hambo and di are given in Appendix E[A].

The cash value of hambo and di held in the village at the time of our survey was as follows:

Table 5

Cash value of hambo and di

	Cash value	Household range	Household average
Hambo	£53.17. 0	0 - £15. 6. 0	£6.12. 2
Di	£17.17. 0	0 - £ 4. 6. 0	£2. 4. 8
Total	£70.14. 0	0 - £19.12. 0	£8.16.10

Few men looked after their own valuables. Two brothers (each the head of a separate household) who kept theirs jointly, left them in the care of their married sister in another village. Another two brothers and their father left their valuables, which they owned jointly, with the wife of the elder brother. Those of another household were held by the wife of the household head. In one instance the household valuables were left in another village in the care of the parents of the

A [See Category 436, pp. 97-99--Analyst]

Table 4

Estimated annual income of entrepreneurs ($)*
(excluding interest on savings)

	A (1965)	B (1963)	C (Average 1963-65)	D (1965)	Household average Inonda and Sivopo** (1962-63)
Sales: coffee	320	286	-	-	3
cocoa	175	***	***	50	-
copra	-	-	244	-	-
rubber	-	-	-	-	2
vegetable	-	16	-	20)	4
hunted meat	-	64	-	-)	
Gross store profits#	91	50	199	42	-
Compensation##	-	35	-	-	6
Government loan###	-	-	-	140	-
Paid labour	-	-	-	-	23
Gifts, etc.	-	-	-	-	11
	586	451	443	252	49

* In many cases these figures are estimates only.
** Crocombe and Hughin 1963b:53, and Rimoldi 1966:78.
*** Not yet bearing
# Assessed at 10 per cent of turnover.
Paid by government for coffee trees cut to widen road.
Under a government resettlement scheme.

Table 5

Estimated value of assets in 1965 ($)*
(not including land, domestic houses or cash savings)

	A	B	C	D	Total	Average	Village householders**
Coffee, cocoa and coconut trees***	3,440	1,320	400	1,740	6,900	1,725	40 (est.)
Buildings#	500	80	100	-	680	170	-
Tools and equipment	252	221	79	287	839	210	15
Consumers durables	240	55	75	132	502	125	10 (est.)
Livestock##	-	-	-	26	26	6	24
Traditional valuables	-	87	-	-	87	22	14
	4,432	1,763	654	2,185	9,034	2,258	123

[128] * This table is based on a series of assumptions, many of indeterminable accuracy. It should therefore be regarded as indicative of trends rather than as a precise record.

** For Inonda and Sivopo householders from Crocombe and Hughin 1963b and Rimoldi 1966. The average per householder for each village have been added and divided by two.

[128] *** Based on valuations for the entrepreneurs kindly supplied by the Chief Valuer, Lands Department (Mr D.D. Balfour-Ogilvy). Value for the village trees was estimated by the writer, on similar criteria.

Including only those buildings used in production (a cocoa fermentery, coffee drying trays and store, and a copra drier respectively). Domestic houses were in all cases built mainly of local materials.

Pigs assessed at $10, fowls at $2 each.

Twelve Orokaiva traders

W.J. Oostermeyer
and
Joanne Gray

Introduction

443 This is a study of twelve Orokaiva entrepreneurs who have
121 engaged in retail trading with varying degrees of success.[1] With only two exceptions, each owns a cash crop also. All except one are accessible by road from Popondetta. Although the sample is reasonably representative of Orokaiva entrepreneurs, quite different patterns may emerge among the few more isolated Orokaiva entrepreneurs or among the non-Orokaiva entrepreneurs in other parts of the district.

121 Each subject will be signified by an alphabetic letter according
128 to the relative success of his store. The names of subjects can be made available for the purposes of further research.

Information on two subject, I and K, is incomplete and possibly inaccurate in some details. Both were away from home at the time, and the questions were answered by close relatives.

124 Language was a limiting factor. English was used with those who had an adequate command of it, but in a number of cases it was necessary to use an interpreter. Some meaning is always lost when communicating through an intermediary, and some entrepreneurs were reluctant to discuss some personal details with an interpreter. The evidence of this report is not substantial enough to permit definite conclusions, and those proffered must be regarded as tentative.

444 Group I comprises four traders who were not operating their
463 stores at the time of the survey. Group II comprises another four
472 whose stores had an average monthly turnover of less than $50.00. Group III comprises those with a turnover in excess of $50 a month.

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(101) [1] The data in this paper were collected by W. Oostermeyer between December 1965 and February 1966. The material was written up by Mrs Joanne Gray.

17: Morawetz U-4,S (1966) 1967 OJ23 Orokaiva OJ23
Ombi-Tara

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Ombi-Tara

Foreword

121 This paper is concerned with an experiment initiated in 1964 in
423 the Northern District of Papua in which land previously held under customary tenure has been converted to registered individual title in accordance with the Land (Tenure Conversion) Ordinance 1963. Three main aspects of conversion were examined:

(i) the motivations and expectations of the people at one of the first conversion schemes, Ombi-Tara;

(ii) the effects of conversion on productivity, land use, residence patterns, work organisation, and social life at Ombi-Tara;

(iii) the cost to the government per acre and per block (i.e. farm) of tenure conversion in the Northern District.

127 Much of the data on the costs of conversion was collected from
124 official files. Where recorded information was not available, estimates based on interviews were used. The body of the Ombi-Tara data as set out in Chapters 3 and 4 was gained from personal interviews carried out between 9 January and 11 February 1966. During
122 these periods my assistants and I lived in the single men's house in Ombi village.

124 All males over the age of fifteen resident at Ombi-Tara were
115 interviewed with the exception of one old man. In addition we interviewed two 'outsiders' who have applied for blocks in the Ombi-Tara scheme. One is a man of the main clan at Ombi (Ihumu) who now lives in a neighbouring village but intends to move to Ombi soon. The other is a Papuan Agricultural Assistant who is stationed at Ombi but whose home village is near Cape Killerton about forty miles away. Interviews were conducted in the local language through interpreters.

128 Interviewing has serious defects. The answers one gets can only be as good as the questions asked. Although we followed up all answers with probes and long, informal discussions, talking is a poor substitute for rigorous and sustained observation over a
[121] period of years. The only justification for using this method is that time was short, and that this paper is intended only as an exploratory attempt to examine the operation of the 1963 land tenure conversion legislation in the only district where it has so far been applied.

17: Morawetz U-4,5 (1966) 1967 QJ23 Orokaiva QJ23
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I am indebted to the New Guinea Research Unit of the Australian National University for generous financial assistance. I wish to thank the Chief Commissioner of Land Titles (Mr D.J. Kelliher) and members of the Commission in Popondetta and Port Moresby; officers of the Department of Agriculture, Stock and Fisheries in Popondetta, and of the Department of District Administration in Popondetta, who discussed various aspects of the project and assisted me in every possible way; Mr Cromwell Bureu, Mr Russell Clarke and Mr Napier Boraba who helped greatly by interpreting both Orokaiva language and culture; Mrs Yvonne McMahon who typed a manuscript which was at times barely legible; and the Ombi-Tara villagers whose warmth, hospitality and enthusiastic co-operation made our stay so enjoyable. Helpful comments on an earlier draft were made by Dr R.G. Crocombe, Mr E.K. Fisk, Mr G.R. Hogbin, Dr R.T. Shand, Mrs S. Faircloth and Mr W. Standish. I am particularly grateful to Dr R.G. Crocombe, Executive Officer of the New Guinea Research Unit, for his advice and encouragement at all stages of the project.

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[124]
[115]

657 423 The procedures which operated from the introduction of tenure conversion in the Northern District are summarised in Appendix B. Procedure was altered by Circular 31.1.9 from the Administrator to all field officers, dated 3 November 1965. Since all tenure conversions up to 1 January 1966 were carried out under the old procedure this has been used as the basis for the following cost estimates.

Method of estimating costs

[128] An attempt was made to gather information on eight conversion schemes in order to estimate the costs of tenure conversion in the Northern District. The stage of development reached at these eight schemes by 9 February 1966 is set out in Table 1. All except the Dapari scheme were among the first ten conversion schemes promoted, and consequently are among the most advanced conversion projects in the country.

Table 1

The state of eight tenure conversion schemes at 9 February 1966

Name of scheme	Blocks	Acres	Crop	Stage of progress
Barisari No.1	55	1,680	coconuts	Hearing completed for 47 applicants on 29 Sept. 1965. Applications filed for other blocks.
New Warisota	32	640	cocoa	Hearing completed 14 Dec. 1965.
Ahora	36	720	cocoa	Hearing completed 28 Jan. 1966.
Ombi-Tara	40	800	rubber	Hearing for 35 applicants completed 9 Feb. 1966.
Somara	10	200	rubber	Awaiting conversion plans to accompany applications.
Barisari No.2	7	210	coconuts	Awaiting conversion plans to accompany applications.
Dobadura-Buna	63	1,260	coconuts	Awaiting applications.
Dapari	44	1,000	rubber	Land Titles Commission survey in progress.

657 423 [128] The costs in salaries of each stage in the conversion process were estimated separately. The number of days[1] spent by an officer on a particular task was converted into the number of days needed per thousand acres and per hundred blocks. Salaries assumed for costing purposes are set out in Table 2.

Although every effort was made to cross-check all information on costs, the figures represent an approximation only. Where possible Field Officer Journals were consulted to determine the number of days each officer spent at a particular scheme. Otherwise estimates were made from discussions with officers concerned. The number of vehicle days in each stage was estimated from the rest of the data.[2]

Salary costs of each stage of the conversion process

(i) Preliminary discussions. Officers of the Department of Agriculture, Stock and Fisheries (D.A.S.F.) or sometimes the Department of District Administration (D.D.A.) are approached by village people who request a tenure conversion scheme for their area. Discussions follow on the nature and implications of conversion. This involves two days each for an Agricultural Officer and his assistant. The number of days spent by officers does not vary with the size of the scheme.

(ii) D.A.S.F. investigation. Agricultural Officers investigate and submit a report on accessibility, names of neighbouring villages and schemes, topography, soil type, vegetation, people's attitude to conversion, crop recommendation and a recommendation concerning priority to be given to the scheme. Estimated time at Ombi-Tara was four days each for an Agricultural Officer and assistant.

(iii) District Development Committee meeting. The D.A.S.F. report goes before an informal meeting of the District Development Committee which allocates priorities for further investigation. Tenure conversion is only one of the committee's many spheres of

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[1] Based on 219 working days a year for expatriate officers, being 365 days less forty-five days leave (overseas officers are entitled to three months leave after twenty-one months' service), less ninety-one Saturdays and Sundays, less ten statutory holidays. Local officers receive three weeks annual leave and hence have 236 working days.

[2] 'Vehicle' is used in this appendix to include vehicle and driver unless otherwise stated. A full day for vehicle and driver was assumed if the officer requisitioning the vehicle spent the whole day at a scheme and returned the same evening. A half day was assumed if the officer was left at the scheme and the vehicle returned to Popondetta.

482

[Housewife carrying garden produce and firewood back to her village, a distance of up to four miles. Her load, excluding baby, is about 100 pounds.]

INTRODUCTION

433 THE traditional economy of New Guinea villages was radically different from our own. Whilst our economy is based upon the production of surplus goods which can be sold for profit, thus providing capital which in turn may be invested to produce greater profits, the key note of the New Guinea economy was self-sufficiency. Traditionally, the people of New Guinea were subsistence cultivators planting their food crops in small clearings in the forests and supplementing this food supply by fishing, by hunting the animals which live in the forests and on the grasslands and by gathering the edible produce of wild vegetation, notably sago. Only the simplest implements were available: stone axes with which trees could be laboriously felled or ring-barked; fire for burning-off the mass of felled timber, vines, and leaves; and sharpened sticks with which holes were made for planting seeds and cuttings. In only a few limited areas, notably the central highlands of the main island, was there any attempt at digging or cultivating the soil prior to planting; in most areas cuttings or seeds were planted in holes made directly in the cleared, ash-covered ground. The burned clearing thus made and used for the growing of food crops is referred to in this book as a swidden.

433 24 [226] [224] [222] [412] [312] [128]

433 24 171 [412]

Such an economy, in which there was no concept of saving and no profit motive, tended to be resistant to change; innovation was unnecessary. But with the coming of white men possessing a superior technology, an important change occurred; steel axes, knives, and spades

(P.1-A)

18: Dukeyne K-S (1962-1964) 1969
OJ23 Orokaiva OJ23
Yoga

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128 Friends and colleagues who read the draft and offered helpful criticisms are Dr H. I. Hogbin, Department of Anthropology and Dr D. N. Jeans, Department of Geography, Sydney University, Mr C. D. Rowley, Director, Institute of Aboriginal Studies, and Mr N. D. Oram, New Guinea Research Unit, Australian National University. Messrs K. O. Clifford and B. McGee gave valuable help with the illustrations.

000 I wish to acknowledge especially, my debt to Mr Oram whose research findings were used extensively in the chapter on Port Moresby. For the opinions expressed however, I accept responsibility.

128 Special thanks are accorded to Mrs Susan Levine for her help in the arduous task of typing and checking the manuscript.
[p.40-B]

19: Schwimmer E-5 (1966-1970) 1979 QJ23 Orokaiva QJ23

write Y1/Y2 as men/women. De Coppet deals with the relations: murderer's clan/victim's clan and wife giver/wife taker. Schwimmer (1973) adds: land giver/land taker; human partner/spirit partner. In all these cases the equivalence rules give values for X1, X2.

The second type of constitutive rules specific to ritual prestations are 'translation rules', i.e. rules about the translation of sentiments into prestations and about inferring sentiments from prestations received. These rules are elicited by asking informants *why* gifts were made. (In Orokaiva, the nearest equivalent of *why?* is *do eto?*, meaning: what having been done, what having been?) I found that (except for identical return gifts), such questions were usually answered in terms of sentiments felt or professed by the donor towards the recipient. Bridewealth was always explained as a way of appeasing the wife-givers' anger at the taking away of their daughter. This anger is not just in the wife-taker's mind but is expressed by the wife-givers by certain stock actions and phrases (as in any joking relation) behind which there are individual variations in genuine attachment to the daughter, genuine aversion to the affines and shrewd calculation. To give another example, many feasts are made in order to restore amity between groups, in which case the small preliminary gift of betel nut and food accompanying the invitation (*sope ikari*, Schwimmer 1973: 151) would stand for an offer of amity (translation rule) and acceptance of the invitation would signify the prospective guests' willingness to forget past grudges.

Semantically, gifts encode sentiments in many ways: by what is given, how much, of what quality, in what manner, where, when, in the context of what relationship and so on.[2] The recipient decodes: he reads the donor's sentiments in the prestation—the only language that, in the cultures discussed here, does not lie. Words are not to be trusted: but a gift is sacred like a statement under oath. Sentiments do not, of course, objectively explain gifts but the translation rules specify what message a particular gift conveys about the donor's sentiments. While social anthropology may not be interested in sentiments as such, it should be interested in the codes in which they are ritually expressed and in which the receiver is urged to change his own sentiments. To the extent that the principle of reciprocity has weight in a society, conflict will tend to be resolved by prestations that will re-establish sentiments of amity rather than by the interpretation of (often ambiguous) rules of law. Such prestations recompense the distress caused rather than the torts committed.

The rest of this article will present an example of semiotic analysis of an exchange system. This analysis, based on Orokaiva data, starts (part II) by investigating terminology used in discourse about gifts, debts, exchange and reciprocity. It explores the relation between the constitutive rules and the ideology of reciprocity.[3] The second step in analysis (part III) will relate this ideology to the overall Orokaiva world-view, thus demonstrating that the principle of reciprocity is not an observer-improvised category but an integral part of the conceptual system. Finally (part IV), we shall consider the relation between the constitutive rules and transactional practices and test Sahlins's theory of exchange against the semiotic analysis of Orokaiva data.

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NOTES

The data presented here were gathered in the Northern Province of Papua New Guinea in summer 1970 with the help of a research grant from the Canada Council. The paper was first presented at a seminar at the Department of Anthropology, University of Chicago. I thank faculty and students at that seminar for their comments, which have led to clarifications of the text.

[1] This article does not discuss what I believe semiotic anthropology to be and what is its relation to French structuralism. The reader is referred to Schwimmer 1977.

[2] It was suggested to me that 'translation rules' may be what Peirce called 'motivations'. Upon reflection, I would suggest that all the constitutive rules of ritualised prestations are concerned with motivations. For instance, taros displayed on a platform at a wedding could be regarded as motivated signs because they are conspicuously part of an 'institution'. If we need a semiotic analogy for 'translation rules', we might say they specify the relation between expression form and expression content in Hjelmslev's sense (1963), where the prestation as message is the expression form and the sentiment immanent in the prestation is the expression content.

[3] MacCormack (1975) rightly remarked on the gap in my monograph (Schwimmer 1973) in respect of the Orokaiva's own rules about reciprocity. There was no reason to expect that he should have been aware that I presented a paper about these rules (Schwimmer 1970). The present article incorporates the main data of that paper, as well as of a later paper presented in Paris in 1974, on the occasion of a conference of French and Canadian ethnographers at the Musée des Arts Populaires.

[4] Two tribes neighbouring Orokaiva have myths concerning figures closely resembling Javaite Poromo, but far from being simple moral tales, these are elaborate myth cycles whose heroes, Wasis for the Ai'i and Ine for the Omie, are said to be the principal exemplars for the 'big man' system in those tribes. Data on these myth cycles were gathered by two Toronto graduate students, namely T. N. Barker for the Ai'i and M. Rohatynskyj for the Omie.

[5] See for instance Fortune (1935) for Manus and Meggitt (1967: 1971) for Mae Enga.

[6] The story is in F. E. Williams's Notebooks now stored in the government archives at Port Moresby and the property of the government of Papua New Guinea. Cf. Notebook W 56 for 1923, quoted in Schwimmer 1973: 140.

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Section 3: The Day of the Eruption

As the eruption itself is the central event of this entire report, I shall dwell upon it in some detail. I shall discuss it from five vantage points: the vulcanologist's, the experience of the Sangara people, the Sivepo and the Inonda people, and finally the action of the administration. The vulcanological aspects have been fully dealt with in G. A. M. Taylor's book, The 1951 Eruption of Mount Lamington, Papua (1958). Taylor writes: "At 1040 hours on Sunday, 21 January, 1951, a paroxysmal explosion burst from the crater and produced a nuée ardente which completely devastated a surrounding area of 68 square miles." This explosion had a marked resemblance to that of Mount Pelée at St. Pierre on Martinique in 1902, when 29,000 people perished in a few minutes. The effect of the Pelean type of explosion is very different from the more usual one which is called "Vulcanian," and which occurred, for instance, at the famous eruption of Vesuvius described by Pliny. One may compare it, rather, with the effect of an atomic bomb; the lethal effect of the nuée ardente seemed to be due mainly to sudden damage to the respiratory system caused by inhaling hot dust. Almost 4,000 people were killed. Destruction in the inner zone of devastation was almost complete: the rain forest on the slopes was flattened and in some places the earth was swept bare, not even stumps remaining as evidence of the previous forest cover. At Higaturu, six miles from the crater, only one house remained reasonably intact; most of the buildings on the government station were carried away. Of the people who lived in this inner zone of devastation scarcely a single one remained alive.

Taylor classified a further 2½ square miles as "partially devastated," "a thin heated strip which bordered the abrupt edge of the zone of complete destruction." The survivors who saved themselves by running away from the blast all came from villages in this marginal area. The line of demarcation was rather precise; everyone from the Sangara mission station was killed, and this station lay just inside the borderline of the area of complete devastation. The people of Isivita, just outside the border of partial destruction, were mostly saved. The people now inhabiting Koborita came from villages such as Tunana, Seamu, Sehundoturu, all of which lie in the area of partial devastation. From the village of Soubo, on the boundary of the area of complete devastation, one man escaped (Table 1).[A]

I interviewed members of 15 Koborita households about their experiences during the day of the eruption. Some of them escaped because they happened to have gone hunting, or were visiting their mother's relatives; one man who had gone to the Sangara church that morning was saved because he had gone home to Ambogo immediately

[A] [See Cat. 116, p. 205--Analyst]

during the night. It did not, however, become a rallying point for resettlement organisation. It was too close to the mountain. Half an hour after the eruption, crowds of Orokaiva carrying pigs, dogs and babies, were already rushing past Awala Station westwards along the road to Kokoda. All these people from the Western slopes stopped at the Waseta Mission, a few miles past Awala, as they were reassured by the presence of a nucleus of Australian organisation. The Sivape people and others who came from a relatively greater distance, stayed at Awala the night of January 21 and some reached Waseta the next day.

Along the Eastern side of the Mountain, among the settlements along the road to Oro Bay, there was no acute danger, but there was fear. Inconda, which was chosen as the control community, was never "resettled "in the sense that its people at any time left their village lands. When they saw the ash and smoke they did, however, consider themselves in danger because of the anger of Sumbiripa. Perhaps in response to police messages, perhaps spontaneously (Inconda informants say the latter) they shifted to the Inconda air strip, which was about a mile along the road in the direction of the coast and there waited for the white man to arrive. Meanwhile, the people of Seva, a related village close to (but well without) the line of partial destruction as shown by Taylor, evacuated their village and joined their relatives at Inconda. This was a more orderly evacuation than most, because the Papuan deacon (who lives at Inconda today and whom I interviewed) had somewhat varied the District Commissioner's message when he delivered it in church on that fatal morning. Though he followed his instructions by advising the adults to remain at Seva, he also said that they had better send their children to Inconda. Thus, when the mountain erupted some time after the service, the children had already gone. Upon arrival at Inconda, the Seva people joined their hosts and camped by the airstrip.

Section 4: The Beginning of Administrative Action

If it had not been for the influence of European administration, this flight from the mountain would probably have been followed by a fairly early return. Administrative measure, at first aimed purely at the relief of distress, soon began to include measures to restrain the fugitives from returning. These measures followed vulcanological predictions, this time based on sound scientific investigation, concerning the likely future behaviour of the mountain. In considering administrative action, there are four aspects to be distinguished: first, the investigation as to the nature of the disaster; secondly, the organisation of food and medical supplies and other immediate relief measure; thirdly, a

121 vulcanological study to guide future policy and fourthly, the
128 planning of longer-term resettlement, with which this report is principally concerned.

During the first day, communication was a difficult problem.
731 A plane sent to Popondetta on the day of the eruption could not land. All official radio communication channels in or near the devastation area were broken down. The government in Port Moresby was informed about the disaster by radio through a private transmitter owned by Mr. Searle and operated from Awala. In the afternoon a car containing an agricultural officer and a technician from the Anglican Mission (Mr. R. Hart) traveled from Popondetta to investigate the situation. This car, after making inquiries at Sangara Station, reached Awala and reported to the government. In the evening there was a second eruption, this time without a nuée ardente but noisier than the morning eruption, the fall of ash was heavier and much larger stones were ejected over a larger distance. The fall of ash was heavy enough to warrant the closing of the aerodrome at Port Moresby, some 140 miles away, on the following morning due to limited visibility. Searle has to stop transmitting messages from Awala as too many stones were falling and an electrical disturbance made transmission impossible. He shifted to Wasata which then became the centre of organised activity on the Western side of the mountain.

On Monday 22 January, the full resources of the administration were directed at rescue work. The Administrator, Col. J. K. Murray, and the Director of Health, Dr. J. Gunther arrived at Popondetta. Mr. Fred Kaad, an officer of the Department of District Administration (now Head of the Australian School of Pacific Administration, Sydney, where I interviewed him) was seconded from Lae to head an organisation to help the fugitives. On the Monday, he reached Popondetta and paid a brief visit to Inonda airstrip. The vulcanologist, G. A. M. Taylor, arrived the same day and began to observe the mountain which he continued to do for two years, being present for all the main active phases of the post-climactic period. At Wasata, the immediate food shortage was relieved from Mr. Searle's stores, but soon food, medicines and blankets began to be air-dropped. At Inonda, an expedition was organised to find missing people from Seva; some Seva people who had been wounded by the eruption were flown to Popondetta for treatment. Mr. W. Schleusner, from Sangara Estate, visited Higaturu and reported the devastation; he counted 200 dead. A district office was set up at Popondetta, to replace the destroyed office at Higaturu; from this office it was decided, on the same day, that refugee camps were to be established at Cape Killerton, for the Sangara survivors and all others from the Eastern and Northern side of the mountain, while the people from the West, now mostly gathered at Wasata, were to be encamped at Wairope, by the side of the Kumusi River.

731 The vulcanologist, from the facts already at his disposal, was able to warn the administration that a prolonged phase of violent explosive activity was to be expected. This is characteristic of Peléan eruptions: at Mont Pélée paroxysmal activity lasted for four months and St. Vincent produced powerful explosions ten months after its initial activity. Hence, the refugees would be in danger were they to return to their villages. A generous area was therefore at once tentatively marked off as uninhabitable; this stretched from Inonda, Higarata to Mongi to Agamahambo, to the Kumusi and in a wide circle round the rest of the mountain. Special permission was needed to enter this restricted area; thus, the refugees would be forbidden, by regulation, to return to their homes.

This policy lies at the core of the entire resettlement scheme: the inhabitants, first of the camps, later of the resettlement villages, never exercised a free choice of residence but were kept by a benevolent government from returning to places where they [628] might come to further harm. Clearly, no other course was open to the Australian government: in its own eyes and in the eyes of the world it was responsible for the well-being of the Orokaiva survivors; the continuing danger of the volcano was a scientific fact of which the Orokaiva could not possibly be aware nor could they be expected to believe it; there were at that time no forms of political organisation such that Orokaiva leaders could have taken decisions on residence that would have been binding upon the people and such that the Australian government could have systematically approached and consulted them. The decision to relocate, therefore, from the beginning rested solely upon the Australian government. No Orokaiva participated in the discussions, held on 22 January, during which the policy was laid down. As a result of the discussions, officers went to the Sangara Estate, to Wasesa, and to other centres of the affected population and transmitted the Administrator's instructions. If arguments were needed, they were clear enough and extremely cogent: the government expected further trouble at the mountain.

Section 5: The Decision to Relocate

121 Under this heading there are three aspects to consider: the participants, the procedure and attitudes towards the necessity of 128 relocation. In the previous section I have made it clear that only the administration participated in the decision-taking process; this 657 was in line with the then existing governmental structure. The local government councils which today might conceivably be involved in discussions did not yet exist in 1951. The only existing

177 fraternised with them. In fact, the friendly atmosphere created by
829 both the American and Australian troops during the war gave the Orokaiva
769 a different view of Europeans than they had before and must have greatly assisted the acceptance of the economic development ideology and local government council movement in the 1950's and 1960's. A
[415] great proportion of the cooking pots, adzes and other steel tools found in the villages today were gifts from the Americans.

769 In all the villages I visited, people listened to the news
829 broadcasts in Motu and Pidgin English; hence they heard about the Vietnam war and we discussed it a few times. The reaction was strange:
[209] it was a great pity that those American boys were being killed in
[191] Vietnam, because they were wonderful people. There was distinct disappointment that the Americans had decided to go to Vietnam instead of returning to Papua-New Guinea. Some jealousy was felt towards the Vietnamese who had now been thus favoured. I tried to assuage the disappointment felt by my informants by summarising some facts from the Manchester Guardian Weekly, my only source of knowledge at the time, but I could see that the convictions of the Orokaiva on this point were unshakable; they knew some things about the Americans which I was (or pretended to be) ignorant of.

Section 10: Self-Group Image

829 The self-group image of the Orokaiva has undergone a profound
[198] change since the war. The question that we need to investigate here is the extent to which the eruption experience affected this long-term change. The most useful procedure will therefore be, as in Section 8,
121 to set out first the present self-group image and its general development
128 over the last few decades; secondly, to place the data we have on the period immediately following the disaster in the framework of this general development.

829 Like other peoples I have personally studied (the New Zealand Maori and the Canadian Indian), the Orokaiva have been the recipients of a barrage of propaganda on the part of missionaries and government officials, who were critical of Orokaiva material standards, social customs and religious beliefs. They also supplied severe sanctions against those who did not change their material standards and customs while considerable inducements were held out to those who would. The Maori and the Blood Indians, while complying on the whole with the demands of the whites, at the same time retained a strong belief in the greatness and, often also, the superiority of their old customs. I was therefore surprised that the Orokaiva had nothing good to say about their own past, representing it as a nightmare from which they were glad to have escaped, while the teachings of the Europeans as well as their goods, provided an opportunity--the only known opportunity--for vast improvement.

753 of traditional enemies, in territory which had always been regarded
731 as hostile and dangerous. Keesing furthermore reports that "these
mountain people apparently could not conquer a fear of the sea, and
[B21] this was reinforced by a rumour that a supernatural "tidal wave" was
to occur along the coast. The camp director told how every night the
more timid scattered on to the higher ground rather than sleep in the
camp on the foreshore."

There is no record that any fears continued after the people were resettled on their own lands. For instance, they ate the products of their land without regard to the fact that they had been scattered by volcanic ash.

164 The abrupt change in diet which occurred in the evacuation
262 camp seems to have had no injurious effects and aroused no great
731 concern. The people liked the rice and meat rations they were given. After awhile they began to long for their own food. Their expeditions to their home villages enabled them to collect at least some taro for themselves.

128 I shall discuss the general health problems of the Orokaiva and government and mission health measure in subsequent chapters.

CHAPTER VII: The Role of Mediators in Development

Section 1: Expatriates

I have referred, right through this report, to certain individuals who seemed to play a key role in development. The study of these key individuals can be adequately carried out only if there is some team work, preferably in the field, with the cooperation of a psychologist. My own approach in this chapter is wholly impressionistic and probably of little scientific utility. Nonetheless, the phenomenon of the mediator, who often appears in a crucial role in situations where values of a newly dominant culture are being transmitted to the newly dominated, is an important object of study in a sociologically oriented analysis of culture change. In an earlier work (Schwimmer, 1956) I developed the thesis that between the two interacting cultures there stand a number of people whose position is best described as one of double opposition: they find themselves in opposition to their culture of origin and also, inevitably, to the strange culture they are seeking to influence and adapt, or to borrow from.

This thesis presented an oversimplified picture. An Australian expatriate, when in contact with Papuans, certainly, almost inevitably, sets up as a champion of his culture of origin and, consciously or unconsciously, pressures the Papuan to adopt it. On the other hand, my definition of the mediator also implied that this expatriate, in contact with his own people, sets up as a champion of Papuan culture. On the surface, this is very far off the mark. I have attended a number of expatriates' social gatherings and found that there was an almost compulsive tendency at these gatherings to devote the time to bemoaning the supposedly grave and irreparable faults in the Orokaiva character. If we are to cast these expatriates in the role of champions of Papuan culture, we are forced to go beyond the conscious level and thus trespass dangerously on the preserve of the psychologists.

One of the most fruitful sources for such an exercise (in this report I shall confine myself to the barest outline) is found in the writings of C.A.W. Monckton, resident magistrate of the Northern District in the first decade of the present century. Though Australian administrators of today regard Monckton's methods with some horror, I would still regard him as, in a deeper sense, a prototype of the Territories administrator; he is more ruthless than those I met, but also more candid and more deeply involved in Papuan culture. He was extraordinarily influential: the Orokaiva fear of the white man, their unremitting vigilence when a white man comes close, the cat-like caution with which the white man is often evaded, can all be traced back to a

24: Schwimmer E-5 (1966-1973) 1977
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partnership with European power are fully canvassed, but conflicts arising out of the relocation of refugees after the eruption and conflicts concerning land tenure are not reflected in ideological discourse related to the disaster. How can we explain this selectiveness?

We may finally ask: To what extent have signs communicated by the eruption become an integral part of the Orokaiva system of thought in 1966? To what extent do they appear in the rhetoric expressing current ideologies? To what extent has the eruption generated these ideologies? How do cognitive systems adapt themselves to far-reaching events (such as the establishment of Australian authority) which call into question the traditional rationale for behavior? In short, the Orokaiva data lead us to an exploration of the dynamics of non-Western thought.

The factual material presented here corresponds closely to the preoccupations agreed on by the contributors to this volume. I commence with the presentation of some background data, emphasizing institutional, transactional, and ecological factors. The semiotic analysis that follows is focused on crisis behavior. The analysis will bring to light conflicts in two areas which are of special concern in comparative study of exile and migration in Oceania: the macrosystem/microsystem relationship and the maintenance of ethnic boundaries.

My discussion of land tenure conflicts, ignored in the ideological discourse under examination, will deal with the cultural meaning of spatial movement and the significance of land at various levels of culture. It will be demonstrated that although land tenure does not figure in ideological discourse about the eruption directly, it is integrated into ideological discourse indirectly.

The use of semiotics in anthropological analysis is at an early stage of development. Among the well-known pioneers in America are Bateson (1935, 1951), Mead (1964), Sebeok (1970), and sources such as E. T. Hall, Alfred Hayes, and Weston LaBarre. In this chapter, I have relied a great deal on the work of Lévi-Strauss (especially 1958, 1960, 1962), whose semiotics forms an integral part of his structural comparative method.

Semiotics has inevitably drawn extensively on linguistic concepts, since linguists have traditionally engaged in sophisticated analyses of symbols. The present chapter owes a debt to Saussure, to Hjelmslev, and especially to Barthes (1964a, 1964b). I would

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whose contact with this aspect of European culture heretofore had been rather slight. The impact of these intensive programs should not be overestimated, however. For people whose world had been shattered by disaster and relocation, adult education was, according to administrators involved in the program, hardly a major concern. Belshaw (1951) expressed the view that the villagers would agree to almost any reform in their villages, as long as they would be allowed to leave Ilimo quickly and return to their land.

Nonetheless, the terms of the exchange relationship between administration and mission on the one hand and the Orokaiva on the other had become a great deal clearer and more profound. The Australians had made gifts and had stated what they wanted from the Orokaiva in detailed, explicit terms. Furthermore, this had been done under the shadow of a calamity which was interpreted by the mission as a sign of God, if not God's punishment, indicating the dangers of not satisfying the Orokaiva's new exchange partners.

The administration has leveled much criticism against the mission for promulgating the theory that the eruption was a visitation of the wrath of God. Numerous instances are quoted of ecclesiastical blackmail: the bishop allegedly threatened to blow up the mountain a second time unless he was obeyed. The bishop denies these allegations and claims to have discouraged the belief that the eruption was a divine punishment of the (largely unbaptized) Orokaiva. He said it was the Orokaiva themselves who had this idea of retribution.

To explain the Orokaiva idea of the anger of God found in the preceding pages, I have brought together a somewhat haphazard collection of signs which make no sense if arranged in a synchronic pattern. They are a sequence of transactions which took place within the colonial macrosystem and were selected on no other grounds than that they were commonly invoked by Orokaiva in discourse about the 'new age'. Soldiers on punitive expeditions, physical punishment at the plantations, the warm exchange relations with Allied troops, the local government councils viewed as a gift from the whites to the Papuans—all these are random selections from history and owe their place in the analysis of the metalanguage to the fact that the Orokaiva commonly used them to *signify the opposition* 'old order/new age'.

Earlier in this section, I explained the idea of the 'anger of Sum-

biripa' in terms of a simple transactional sequence. The 'anger of God' can be similarly explained, though here the sequence is more complex. As a general device for constructing metalanguages, transactional sequences are of course wholly inadequate. I have, however, indicated that in the Orokaiva cognitive system God is classified as an exchange partner (though more powerful than all other possible partners).

The eruption thus becomes one of a sequence of signs which express the development of the exchange partnership with God. Similarly, in other explanatory systems, the eruption becomes part of a sequence of exchanges with Sumbiripa. It follows from this argument that the eruption changed the relationship with God or Sumbiripa, in the sense that a sign of such magnitude provoked a response. While the sign may have existed as such only in the minds of the Orokaiva, the response was on the level of real social, economic, political, and religious behavior. The general form of Orokaiva metalanguages, as exemplified in the case of the eruption, is sketched in figure 1.

EXPLANATIONS AND THE COGNITIVE SYSTEM

We have now surveyed the four explanations given of the eruption of Mount Lamington. In my discussion of the denotative systems, I concentrated on two of them: the anger of Sumbiripa and the anger of God. I did not specifically discuss the geophysical explanation because it was too summary for analysis, nor did I analyze the Yega explanation further because of the uncertainty about the agent of vengeance. We have seen that the four explanations were, in each case, not only a psychological response to calamity and a philosophical exercise but also expressed ideologies essentially unconnected with the eruption and that, in this respect, discourse about the eruption was actually rhetoric used to express the ideology.

The coexistence of four such ideologies in the same society poses obvious questions about their interrelations. Were they held by separate groups who did not communicate? Did they reflect divisions within the society? Furthermore, a formal problem arises: as these four explanatory systems all arise in one, fairly homogeneous society, are they in a sense cognate and do they display features of homology? On the basis of Orokaiva data, it may be possible to

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the enemy, but rather in the Papuan sense, where one contends with exchange partners in an inconclusive tug-of-war and the strength of the opponents is approximately equal. Victory, in other words, is the establishment of an equal rather than an unequal relationship.

Given this view of the European-Orokaiva relationship, it is difficult to distinguish between millenarian and gradualist ideologies among the Orokaiva. They are all, in a sense, millenarian, even though they advocate full collaboration with both mission and government. From the more objective view I have taken here, the three Orokaiva ideologies present at the time of the eruption all convey the same message. They are all concerned with the restoration of what the Orokaiva call 'power', which always implies some form of power balance between themselves and their colonial masters.

IDEOLOGY, POWER, AND LAND

As we have seen, all Orokaiva discourse about the eruption can be reduced to one basic theme: competition for power between Papuans and Europeans. I have not surveyed administration discourse about the eruption in the same detail, but it is safe to say that, apart from the mechanics of relief, the administration was likewise concerned with one central ideological theme, namely socioeconomic development. Our structural analysis would hardly be adequate unless we considered the relation between these two ideologies, not only in abstract terms but also in the framework of concrete events.

During the period immediately after the disaster, the administration planned to make the evacuation camps the beginning of permanent relocation under conditions where socioeconomic development throughout the region could be accelerated (Belshaw 1951; Keesing 1952; Plant 1951). While this relocation was being planned, the evacuees were adamant that they wished to go home as soon as possible (Belshaw 1951; Kaad, personal communication). That the administration gave in to the evacuees should not be regarded as a Papuan demonstration of their own power but rather as a necessary response to practical problems facing Orokaiva as swidden agriculturists lacking a secure system of individual, unencumbered landholding. The circumstances of the closing

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cognitive system. For the most part, however, I was concerned with microprocesses, such as the simultaneous development of explanatory systems based respectively on a tribal, Cargo Cult, and church-administration ideology. None of these ideologies was generated by the eruption, but the eruption was treated as a sign within the context of each of these ideologies, with a different interpretation in each case.

The eruption became a sign because it took its place in a series of ongoing transactions with supernatural beings. As such it had the effect of changing the relationships with these beings in regard to both duties and expectations. The eruption differed from other such signs mainly by its cataclysmic character and its unequivocal demonstration of power. The fact that different interpretations evolved is not an accident but mirrors an ongoing debate within the society. The evidence suggests that cognitive structures do not change by a process of unilineal development but by a process of internal differentiation opening up a dialectic between ideologies opposed to one another along the axes of basic social conflicts. In the Orokaiva case these axes were tribalism/regionalism and denial/acceptance of the partnership with European power. If opposition exists along these two axes, four systems are theoretically possible—namely, tribalism + denial, tribalism + acceptance, regionalism + denial, and regionalism + acceptance. As we have seen, each of these four combinations was found in actuality. The four Orokaiva theories thus form a well-structured whole, and together they express contemporary Orokaiva social reality. The structural changes that were taking place in the period 1951 to 1966 did not come out overtly in discourse but had been recognized and given meaning in terms of the ideologies in 1966.

NOTES

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26: Schwimmer E-5 (1966-1970) 1974
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Orokaiva marriage (Schwimmer, 1970) and have shown that sister-exchange marriage, though infrequent, is regarded as the ideal form. Elopement and abduction marriages, once the most frequent, are now frowned upon, though elopement is still prevalent. The patrilateral preference rule (marrying out a girl in her mother's village) is still regularly stated by informants. In my records, which go back to the third generation, I found that 35% of the resident married women had been married out by that rule for the whole three generations, i.e., they had been exchanged for their mothers and their mothers for their grandmothers.

In the study [2] that follows, I shall first present data concerning the coconut and areca, then about the taro. I shall follow this presentation with a brief discussion about the relation between the levels of myth and ritual.

I. COCONUT AND ARECA

A salient characteristic of the ethnobotany of the Orokaiva is the classification of plants as masculine and feminine. Certain important cultivars are grouped together as opposite-sex couples and grown in close association with one another. Claims are made that such plants will not prosper unless they are planted close together and that, in their wild state, they are also found together.

The symbolic association of these pairs of plants may be based on a number of shared characteristics: the similar outward appearance of the fruit, a coincidence in the time of fruiting, and similarities in culinary use, taste, and supposed physiological effects of the fruit when eaten. Sometimes the pairs of plants are linked in ritual use and in a common myth.

Coconut and areca are planted together in villages as well as gardens. Both nuts are eaten raw between meals; both grow on palms; both are offered to visitors—the coconut as refreshment immediately upon arrival and the areca (along with *hingi* pepper and lime) for chewing during the conversation. At mortuary feasts cóconut and areca are the principal gifts, offered in large quantities to guests from villages who helped to bury

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NOTES

101 114 1. The classic works on the Orokaiva are Williams (1928, 1930). Useful studies in Orokaiva swidden agriculture are Crocombe and Hogbin (1963), Rimoldi (1966), Krinks and Waddell (1968). For my own studies on Orokaiva culture, see Schwimmer (1967, 1969, 1972, 1974, and n.d.).

114 128 2. Most of the present study was done in Paris in 1970 and distributed in mimeographed form by the Laboratoire d'Anthropologie Sociale under the title "The Ideology of Exchange." I should like to express my gratitude to Professor Lévi-Strauss, Drs. Godelier and Pouillon, and the other members of the staff for their hospitality and encouragement. My wife, Mrs. Zsuka Schwimmer, worked with me in the field on the collection of data and later with their analysis.

824 431 3. "A principle of gradation by which elements are related to the whole of which they form part."

121 4. Professor Lévi-Strauss suggested to me a most interesting relationship between this myth and the Polynesian Maui cycle. Maui was killed by a "Woman of Darkness," Maori: Hinenuiotepo.

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